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SESSIONAL PAPERS

VOLUME 7

FIRST SESSION OF THE ELEVENTH PARLIAMENT

OF THE

DOMINION OF CANADA

SESSION 1909

101967
26/5/10

VOLUME XLIII

See also Numerical List Page 5.

ALPHABETICAL INDEX

TO THE

SESSIONAL PAPERS

OF THE

PARLIAMENT OF CANADA

FIRST SESSION, ELEVENTH PARLIAMENT, 1909

A

Adulteration of Food.. 14
Agriculture, Annual Report.. 15
Alaska Boundary.. 81
Alberta Natural Resources.. 84
All-Red Line.. 47
Aluminum Exports and Imports.. 119
Armouries Erected.. 144
Assiniboia River.. 146
Astronomer, Chief, Report of.. .. .. .. 25*a*
Auditor General, Annual Report.. .. 1
Aylwin, Francis Percival.. 123

B

Balance Sheet of Canada.. 66
Banks, Chartered.. 6
Banks, Unpaid Balances in.. 7
Bill Miner.. 110
Bonaventure Riding.. 138
Bonds and Securities.. 55
Boring for Oil, &c.. 75
British Canadian Loan and Investment Co.. 92
British Columbia:—
Bibington, Thomas.. 148
Dominion Lands.. .. ..59, 106*d*
Indian Reserves.. 122
British Fleet.. 114
Budget Speech, 1898.. 109

C

Caledonia to Liverpool Railway.. 118
Canada and France Convention.. ..101, 102
Canadian Pacific Railway:—
Additional Stock.. .. ..63, 63*d*
Business with Interior Department. 63*a*
Lands sold by.. .. .. 63*c*
Running Rights over Intercolonial.. .. ..63*b*, 63*c*
Canal Statistics.. .. .. 20*a*
Carillon and Grenville Canals.. 98
Cash to Credit of Government.. 108
Cassels, Hon. Justice, Report of.. ..38, 38*a*
Chartered Banks.. 6
Chicoutimi Pier.. .. ..164, 164*a*
Chinese Capitation Tax.. 162
Civil Service:—
Appointments and Promotions.. .. 58
Bill.. .. .. 49*g*
Classifications.. .. ..49 to 49*c*
Examiners.. 31
Insurance.. 42
List.. 30
Regulations of Commission.. 143
Re-organization.. .. ..58*a* to 58*j*
Superannuations.. 41
Coal Oil.. 103
Colclaugh, F. W... .. .. 116*a*
Cold Storage.. 133

C

Costello, Thomas, Report of.. 87
Cotton Factories, Industrial Disputes in.. 39
Criminal Statistics.. 17

D

Dairy and Cold Storage Commissioner. 15*a*
Disallowance of an Ontario Act.. 140
Dividends Unpaid in Banks.. 7
Dog-Fish Reduction.. 131
Dominion Lands.. .. ..61, 70
Dominion Police.. 54

E

Elections, House of Commons, 1908.. .. 18
Electric Light, Inspection of.. 13
Estimates.. .. ..3 to 5*a*
Exchequer Court Rules.. 48
Excise Revenue.. 12
Experimental Farms.. .. ..16, 89

F

Farming in Canada, Report on.. 156
Fisheries, Annual Report.. 22
Fishermen's Union, Nova Scotia.. 167
Fishing Bounties.. .. .. 165*b*
Fishing Leases.. 125
Fishing Vessels Seized.. 126
Foot and Mouth Disease.. .. ..82, 82*a*
France and Canada Convention.. ..101, 102
Fresh Fish.. 83

G

Gas, Inspection of.. 13
General Election, 1908.. 18
Geodetic Service Bureau.. .. .. ..145 to 145*b*
Geographic Board.. .. .. 21*a*
Geological Survey Report.. 26
Georgian Bay Ship Canal.. .. .. 19*a*
Government Savings Department....124, 124*a*
Governor General's Warrants.. 43
Grand Trunk Pacific Lands.. 69
Grand Trunk Railway in Ottawa.. .. 127

H

Half-breed Scrip.. 139
Hand Hills Post Office.. .. .. 128*a*
Harbour Commissioners.. 23
Hogs Killed.. 169
House of Commons:—
General Election, 1908.. 18
Employees Appointed.. 80
Internal Economy.. 52
Translation Branch.. 142
Hudson Bay Railway.. .. ..93, 93*a*

I

Ice-breaking Steamers.. .. ..115, 161
Immigration Agents.. .. ..129 to 129*b*
Imperial General Staff.. 99
Imperial Naval Defence.. 170
Indian Affairs, Annual Report.. 27
Indian Reserves.. .. ..100 to 100*e*
"Industry", Dredge.. 134
Inland Revenue, Annual Report.. 12
Insurance, Abstract.. 9
Insurance, Annual Report.. 8
Intercolonial Railway:—
Board of Management.. .. .. 67*e*
Branch Lines.. 67
Cap St. Ignace.. .. ..67*f*, 67*g*
Damages.. .. .. 85*c*
Dismissals.. .. .. 67*d*
Freight Clerks.. .. .. 67*c*
Machinery Purchased.. 85
Open Accounts.. .. .. 67*b*
Report of Privy Council.. .. .. 67*i*
Under Railway Board.. .. .. 67*h*
Wire Fencing.. .. .. 67*a*
Interior, Annual Report.. 25
International Boundary Waters.. ..104, 104*a*

J

Jacobs, F. Macdonald.. 113
Justice, Annual Report.. 34

K

Kingston Barracks.. 112
Kingston Penitentiary.. 121
Kingston Veterinary Hospital.. .. .. .. 112*a*

L

Laberge, Alphonse.. 160
Labour Department, Annual Report.. 36
Lachute Mills Post Office.. 62
Lakes Simcoe and Couchiching.. .. .. 111*b*
Lake St. John Repatriation Society..157, 166
Lands in various Provinces.. .. ..106 to 106*e*
Laterrière Village.. 171
Liabilities of Government.. .. .. ..105*g*, 109*a*
Library of Parliament, Annual Report. 33
List of Shipping.. .. .. 21*b*
Loans by Government.. .. ..105 to 105*g*
Lobster Licenses.. .. .. 165*a*
Logberg Printing Co.. .. ..132, 132*a*

M

Mail Contracts.. 149
Mail Deliveries.. .. ..73, 73*a*
Manitoba Fisheries.. 116
Manitoba Post Offices.. 128
Marine and Fisheries, Patronage System 51
Marine, Annual Report.. 21
Measures, Inspection of 13

M

Militia Council, Annual Report.. ..35, 35*a*
Militia General Orders.. 74
Mines, Report of Department.. .. .. .. 26*a*
Mint, Royal.. .. ..71, 71*a*
Miscellaneous Revenue.. 72
Mounted Police.. 28

N

National Transcontinental Railway:—
Contract, Station 9370 to 9480.. .. .. 46*b*
Dominion Police Constables.. .. .. 46*e*
Eastern Division Classifications.. .. 46*f*
Interim Report.. .. .. 46*d*
Persons Employed.. .. ..46*g*, 46*l*
Questions by Mr. R. L. Borden.. .. 46*j*
Report of Collingwood Schreiber.. 46*c*
Report of Commissioners.. 46
Tenders for Various Sections.. ..46*h*, 46*m*
Treatment of Employees.. .. .. .. 46*k*
Winnipeg Terminals.. .. .. 46*a*
Work Executed.. .. .. 46*i*
Nation River, Dundas.. 154
Newfoundland, Admission of.. 159
Newmarket Canal.. .. ..94, 94*a*
North American Conservation Conference.. 90
Northwest Irrigation Act.. 60

O

Olin, Charles, Report of.. 96
Otonabee River.. 111
Ottawa Improvement Commission.. .. 57
Ottawa Station.. 127

P

Pacific Cable Board.. 158
Payments by the Departments.. 130
Penitentiaries, Annual Report.. 34
Police, Royal Northwest Mounted.. .. 28
Postal Law.. 163
Postmaster General, Annual Report.. 24
Prisoners, Release of.. 53
Public Accounts, Annual Report.. 2
Public Printing and Stationery.. 32
Public Works, Annual Report.. 19
Public Works Constructed.. 168
Public Works Employees.. .. .. 49*f*
Public Works, Purchases by.. 135

Q

Quebec Bridge Co.. 64

R

Railway Charters.. .. ..141, 141*a*
Railway Commissioners, Report of.. .. 20*c*
Railway Crossings.. .. ..76 to 76*b*, 120
Railways and Canals, Annual Report.. 20
Railway Statistics.. .. .. 20*b*
Railway Subsidy.. 117
Remissions under Indian Act.. 79
Ross Rifle.. 136
Royal Mint.. .. ..71, 71*a*
Royal Northwest Mounted Police.. .. 28

S

Secretary of State, Annual Report.. .. 29
Seed Grain Distribution.. .. ..25*c* to 25*e*, 65
Seine Trap Licenses.. .. .. 165*b*
Seining Licenses.. 165
Seizures by Dept. of Inland Revenue.78, 78*a*
Shareholders in Chartered Banks.. .. 6
Shipping, List of.. .. .. 21*b*
Soulanges Wharfs.. 153
Statistical Publications.. 147
Steamboat Inspection.. .. .. 23*a*
Steel Imports.. 77
St. John Harbour.. .. ..137, 137*a*
St. John River Survey.. 152
St. Lawrence Insurance Rates.. 91
Stony Lake.. .. .. 111*a*
Subsidized Steamship Service.. .. .. .. 10*b*
Subway near Kingston Junction.. 50
Surveyor General, Report of.. .. .. .. 25*b*

T

Timber Berth 1122.. 68
Topographical Surveys Branch.. .. .. 25*b*
Trade and Commerce.. .. ..10 to 10*b*
Trade and Navigation, Annual Report. 11
Trade Unions.. 56
Transcontinental Ry. Commissioners.... 46
Treaties and Conventions.. .. .. 10*a*
Treaties with United States.. .. .. ..86, 88

U

Unclaimed Balances in Banks.. 7
Unforeseen Expenses.. 40

V

Veterinary Director General.. .. .. .. 15*a*
Villa Lots.. 97
Voters' Lists.. .. ..95 to 95*c*

W

Weights, Measures, &c.. 13
Weymouth Post Office.. .. .. 128*b*
Winnipeg "Canada Posten".. 155
Winnipeg "Free Press".. .. ..107, 107*a*
Woollen Industry in Great Britain.. .. 87

Y

Yukon:—
Imposition of Tax.. 151
Mining Lands.. 150
Ordinances.. 44

See also Alphabetical Index, page 1.

LIST OF SESSIONAL PAPERS

Arranged in Numerical Order, with their titles at full length; the dates when Ordered and when Presented to the Houses of Parliament; the Name of the Senator or Member who moved for each Sessional Paper, and whether it is ordered to be Printed or Not Printed.

CONTENTS OF VOLUME 1.

(This volume is bound in two parts.)

1. Report of the Auditor General for the year ended 31st March, 1908. Presented 21st January, 1909, by Hon. W. Paterson; also 19th February, 1909, by Hon. W. S. Fielding; also 23rd February, 1909, by Hon. W. Paterson.
Printed for both distribution and sessional papers

CONTENTS OF VOLUME 2.

2. Public Accounts of Canada, for the fiscal year ended 31st March, 1908. Presented 21st January, 1909, by Hon. W. Paterson..*Printed for both distribution and sessional papers.*

3. Estimates of the sums required for the services of Canada for the year ending 31st March, 1910. Presented 1st February, 1909, by Hon. W. Paterson.
Printed for both distribution and sessional papers.

4. Estimates of the sums required for the services of Canada for the year ending on the 31st March, 1909. Presented 15th March, 1909, by Hon. W. S. Fielding.
Printed for both distribution and sessional papers.

4*a*. Further Supplementary Estimates of sums required for the service of Canada for the fiscal year ending 31st March, 1909. Presented 10th May, 1909, by Hon. W. S. Fielding.
Printed for both distribution and sessional papers.

5. Supplementary Estimates of sums required for the service of Canada, for the fiscal year ending on 31st March, 1910. Presented 10th May, 1909, by Hon. W. S. Fielding.
Printed for both distribution and sessional papers.

5*a*. Further Supplementary Estimates of sums required for the service of Canada, for the year ending on 31st March, 1910. Presented 18th May, 1909, by Hon. W. S. Fielding.
Printed for both distribution and sessional papers.

6. List of Shareholders in the Chartered Banks of Canada, as on 31st December, 1908. Presented 13th May, 1909, by Hon. F. Oliver.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 3.

7. Report of dividends remaining unpaid, unclaimed balances and unpaid drafts and bills of exchange in Chartered Banks of Canada, for five years and upwards, prior to 31st December, 1908.. .. ..*Printed for both distribution and sessional papers.*

CONTENTS OF VOLUME 4.

8. Report of the Superintendent of Insurance for the year ended 31st December, 1908.
Printed for both distribution and sessional papers.

9. Abstract of Statements of Insurance Companies in Canada, for the year ended 31st December, 1908... .. ..*Printed for both distribution and sessional papers.*

CONTENTS OF VOLUME 5.

10. Report of the Department of Trade and Commerce, for the fiscal year ended 31st March, 1909. Part I.—Canadian Trade. Presented 27th January, 1909, by Hon. W. Paterson.
Printed for both distribution and sessional papers.

10*a*. Report of the Department of Trade and Commerce, Part II, Trade of Foreign Countries and Treaties and Conventions, for the fiscal year ended 31st March, 1908. Presented 5th April, 1909, by Sir Wilfrid Laurier.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 6.

10*b*. Report of the Department of Trade and Commerce, Part III, Subsidized Steamship Service, &c., for the year ended 31st March, 1908. Presented 22nd March, 1909, by Sir Wilfrid Laurier.. .. ..*Printed for both distribution and sessional papers.*

11. Tables of the Trade and Navigation of Canada, for the fiscal year ended 31st March, 1908. Presented 21st January, 1909, by Hon. W. Paterson.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 7.

12. Inland Revenues of Canada. Excise, &c., for the fiscal year ended 31st March, 1908. Presented 21st January, 1909, by Hon. W. Paterson.
Printed for both distribution and sessional papers.

13. Inspection of Weights, Measures, Gas and Electric Light, for the fiscal year ended 31st March, 1908. Presented 21st January, 1909, by Hon. W. Paterson.
Printed for both distribution and sessional papers.

14. Report on Adulteration of Food, for the fiscal year ended 31st March, 1908. Presented 11th March, 1909, by Hon. W. Templeman.
Printed for both distribution and sessional papers.

15. Report of the Minister of Agriculture, for the fiscal year ended 31st March, 1908. Presented 21st January, 1909, by Hon. S. A. Fisher.
Printed for both distribution and sessional papers.

15*a*. Report of the Dairy and Cold Storage Commissioner, for the fiscal year ended 31st March, 1908. Presented 21st January, 1909, by Hon. S. A. Fisher.

Printed for both distribution and sessional papers.

15*a*. (2) Report of the Veterinary Director General and Live Stock Commissioner, for two years ended 31st March, 1908... ..*Printed for both distribution and sessional papers.*

CONTENTS OF VOLUME 8.

16. Report of the Directors and Officers of the Experimental Farms for the year ended 31st March, 1908. Presented 31st March, 1909, by Hon. S. A. Fisher.
Printed for both distribution and sessional papers.

17. Criminal Statistics for the year ended 30th September, 1908.
Printed for both distribution and sessional papers.

18. Return of the Eleventh General Election for the House of Commons of Canada, held on the 26th day of October, 1908... .. .. ..*Printed for both distribution and sessional papers.*

CONTENTS OF VOLUME 9.

19. Report of the Minister of Public Works, for the fiscal year ended 31st March, 1908. Presented 3rd February, 1909, by Hon. W. Pugsley.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 10.

19*a*. Georgian Bay Ship Canal. Report upon survey, with plans and estimates of cost, 1908. Presented 22nd January, 1909, by Hon. W. Pugsley.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 11.

20. Report of the Department of Railways and Canals for the fiscal year ended 31st March, 1908. Presented 19th February, 1909, by Hon. G. P. Graham.
Printed for both distribution and sessional papers.

20*a*. Canal Statistics for the season of navigation, 1907.
Printed for both distribution and sessional papers.

20*b*. Railway Statistics of Canada, for the year ended 30th June, 1908. Presented 25th February, 1909, by Hon. G. P. Graham.*Printed for both distribution and sessional papers.*

20*c*. Third Report of the Board of Railway Commissioners for Canada, to 31st March, 1907, for the year ending 31st March, 1908. Presented 29th January, 1909, by Hon. G. P. Graham.. .. ..*Printed for both distribution and sessional papers.*

CONTENTS OF VOLUME 12.

21. Report of the Department of Marine and Fisheries (Marine) for 1908. Presented 18th February, 1909, by Hon. L. P. Brodeur.
Printed for both distribution and sessional papers.

21*a*. Seventh Report of the Geographic Board of Canada; containing all decisions to 30th June, 1908. Presented 22nd February, 1909, by Hon. L. P. Brodeur.
Printed for both distribution and sessional papers.

21*b*. List of Shipping issued by the Department of Marine and Fisheries, being a list of vessels on the registry books of Canada on the 31st December, 1908.
Printed for both distribution and sessional papers.

22. Report of the Department of Marine and Fisheries (Fisheries) for 1908. Presented 9th February, 1909, by Hon. L. P. Brodeur.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 13.

23. Report of the Harbour Commissioners, &c.
Printed for both distribution and sessional papers.

23*a*. Report of the Chairman of the Board of Steamboat Inspection, 1908.
Printed for both distribution and sessional papers.

24. Report of the Postmaster General, for the fiscal year ended 31st March, 1908. Presented 21st January, 1909, by Hon. R. Lemieux.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 14.

25. Report of the Department of the Interior, for the fiscal year ended 31st March, 1908. Presented 15th February, 1909, by Hon. F. Oliver.
Printed for both distribution and sessional papers.

25*a*. Report of the Chief Astronomer for the fiscal year ending 31st March, 1908. Presented 13th May, 1909, by Hon. F. Oliver.. ..*Printed both for distribution and sessional papers.*

25*b*. Annual Report of the Topographical Surveys Branch, including Report of the Surveyor General of Dominion Lands, 1907-1908.*Printed for both distribution and sessional papers.*

25*c*. Correspondence and papers, including financial statement, relating to Seed Grain Distribution of 1908 in the provinces of Saskatchewan and Alberta. Presented 28th January, 1909, by Hon. F. Oliver.. ..*Printed for both distribution and sessional papers.*

25*d*. Return to an order of the House of Commons, dated 1st March, 1909, showing how many bushels of seed wheat were bought for Saskatchewan and Alberta for the season of 1908, whom it was bought from, at what price, and what grade it was; if the wheat so bought was cleaned for seed; how the wheat so bought was used; who it was sold to, and at what prices; the total loss in connection with the wheat so bought. Presented 15th March, 1909.—*Mr. Sharpe (Lisgar).. .. ..Not printed.*

25*e*. Return to an order of the House of Commons, dated 1st March, 1909, showing how many bushels of English oats were bought for seed in Saskatchewan and Alberta for the season of 1908, and at what prices; the condition the oats were in before or when they were bought; if used for seed or sold; whom they were sold to and in what places; the total loss in connection with the oats bought in England, and any complaints there were about them. Presented 15th March, 1909.—*Mr. Sharpe (Lisgar).....Not printed.*

CONTENTS OF VOLUME 15.

26. Summary Report of the Geological Survey Branch of the Department of Mines, for the calendar year 1908. Presented 3rd May, 1909, by Hon. W. Templeman.
Printed for both distribution and sessional papers.

26*a*. Summary Report of the Mines Branch of the Department of Mines, for the nine months ended 31st December, 1908..*Printed for both distribution and sessional papers.*

27. Report of the Department of Indian Affairs, for the year ended 31st March, 1908. Presented 22nd January, 1909, by Hon. F. Oliver.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 16.

28. Report of the Royal Northwest Mounted Police, 1908. Presented 9th March, 1909, by Sir Wilfrid Laurier.. .. ..*Printed for both distribution and sessional papers.*

29. Report of the Secretary of State of Canada, for the year ended December, 1907, and the first three months of the year 1908 Presented 22nd January, 1909, by Hon. C. Murphy.. .. ..*Printed for both distribution and sessional papers.*

30. Civil Service List of Canada, 1908. Presented 22nd January, 1909, by Hon. C. Murphy.
Printed for both distribution and sessional papers.

31. Report of the Board of Civil Service Examiners, for the year ended 31st December, 1908.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 17.

32. Annual Report of the Department of Public Printing and Stationery, for the fiscal year ended 31st March, 1908. Presented 7th May, 1909, by Hon. C. Murphy.
Printed for both distribution and sessional papers.

33. Report of the Joint Librarians of Parliament for the year 1908. Presented 21st January, 1909, by the Hon. the Speaker.. .. ..*Printed for sessional papers.*

34. Report of the Minister of Justice as to Penitentiaries of Canada, for the fiscal year ended 31st March, 1908. Presented 21st January, 1909, by Hon. W. Paterson.
Printed for both distribution and sessional papers.

35. Report of the Militia Council, for the fiscal year ended 31st March, 1908. Presented 9th March, 1909, by Sir Frederick Borden.
Printed for both distribution and sessional papers.

35*a*. Memorandum respecting the estimates for Militia and Defence for 1909-10. Presented 9th March, 1909, by Sir Frederick Borden.
Printed for both distribution and sessional papers.

36. Report of the Department of Labour, for the fiscal year ended 31st March, 1908. Presented 21st January, 1909, by Hon. R. Lemieux.
Printed for both distribution and sessional papers.

37. Report upon the Survey of the Georgian Bay Ship Canal, with plans and estimate of cost.. .. ..*See No. 19a.*

38. Report of the Hon. Mr. Justice Cassels, Commissioner appointed to investigate the affairs of the Department of Marine and Fisheries. Presented 22nd January, 1909, by Hon. L. P. Brodeur.. .. ..*Printed for both distribution and sessional papers.*

38*a*. Minute of a Report of the Committee of the Privy Council, approved by His Excellency the Governor General on the 29th March, 1909:—The Committee of the Privy Council have had under consideration a report, herewith, dated 27th March, 1909, from the Minister of Marine and Fisheries, upon the investigation recently held by the Honourable Walter Cassels respecting the statement contained in the Report of the Civil Service Commission reflecting upon the integrity of officials of the Department of Marine and Fisheries and submitting certain recommendations affecting the officials therein named. The Committee, concurring in the said Report and the recommendation therein contained, submit the same for Your Excellency's approval. Presented 30th March, 1909, by Hon. L. P. Brodeur.
Printed for both distribution and sessional papers.

39. Report of the Royal Commission appointed to inquire into industrial disputes in the cotton factories of the province of Quebec. Presented 25th January, 1909, by Hon. R. Lemieux.. .. ..*Printed for both distribution and sessional papers.*

CONTENTS OF VOLUME 17—*Continued.*

40. Statement of expenditure on account of miscellaneous unforeseen expenses from the 1st April, 1908, to the 20th January, 1909, in acordance with the Appropriation Act of 1908. Presented 26th January, 1909, by Hon. W. Paterson.. .. ..*Not printed.*

41. Statement of superannuations and retiring allowances in the civil service during the year ended 31st December, 1908, showing name, rank, salary, service, allowance and cause of retirement of each pearson superannuated or retired, also whether vacancy filled by promotion or by new appointment, and salary of any new appointee. Presented 26th January, 1909, by Hon. W. Paterson.. .. ..*Not printed.*

42. Statement in pursuance of section 17 of the Civil Service Insurance Act for the year ending 31st March, 1908. Presented 26th January, 1909, by Hon. W. Paterson.
Not printed.

43. Statement of Governor General's Warrants issued since the last session of parliament, on account of the fiscal year 1908-9. Presented 26th January, 1909, by Hon. W. Paterson.. .. ..*Not printed.*

44. Ordinances of the Yukon Territory, passed by the Yukon Council in the year 1908. Presented 27th January, 1909, by Hon. C. Murphy.. .. ..*Not printed.*

45. Third Report of the Board of Railway Commissioners.. .. ..*See No. 20c.*

46. Report of the Commissioners of the Transcontinental Railway, for the year ending 31st March, 1908. Presented 29th January, 1909, by Hon. G. P. Graham.
Printed for both distribution and sessional papers.

46*a*. Return to an order of the House of Commons, dated 15th February, 1909, for a copy of all correspondence between Rothwell, Johnston & Stubbs, lawyers, of Winnipeg, and the government, or the Transcontinental Railway Commissioners respecting their instructions in regard to the purchase of the Winnipeg terminals from Kern & Mathews, and in respect to the legal services rendered by them for the government, and passing of titles of the property, and a copy of the solicitors' bills of costs, charges and correspondence arising therefrom; and of all correspondence between the government and the Railway Commissioners and the vendors, Kern & Mathews, from the commencement of the negotiations; and also showing what steps, if any, were taken towards expropriating the property, or obtaining judicial determination as to the value of the said property. Presented 4th March, 1909.—*Mr. Bradbury*.. .. ..*Not printed.*

46*b*. Return to an order of the House of Commons, dated 22nd February, 1909, showing the final estimates on the contract entered into on August 22, 1906, between J. D. McArthur and Smith & Prendible on the National Transcontinental Railway, for work from station 9370 to station 9480; and the contract entered into on 21st November, 1908, between the same parties on the same railway for work from station 9260 to station 9370. Presented 11th March, 1909.—*Mr. Haggart (Winnipeg)*.. .. ..*Not printed.*

46*c*. Report of Collingwood Schreiber, Esquire, chief engineer western division National Transcontinental Railway. Presented 15th March, 1909, by Hon. G. P. Graham.
Not printed.

46*d*. Interim Report of the Commissioners of the Transcontinental Railway, for the nine months ending 31st December, 1908. Presented 15th March, 1909, by Hon. G. P. Graham.. .. ..*Not printed.*

46*e*. Statistics of Dominion Police Constables employed along the line of the Transcontinental Railway during the calendar year 1908. Presented 23rd March, 1909, by Hon. A. B. Aylesworth.. .. ..*Not printed.*

46*f*. Return to an order of the House of Commons, dated 22nd March, 1909, for a copy of all letters, correspondence, statements and writing between the Grand Trunk Pacific Railway Company, or its engineers or agents, and the Commissioners of the Transcontinental Railway, or their engineers or agents, and between the commissioners and their engineers, and between the commissioners and their engineers and agents and the con-

CONTENTS OF VOLUME 17—*Continued.*

tractors or sub-contractors on Districts B and F after mentioned, as to classification or alleged over classification on Districts B and F of the Eastern Division of said railway, and of all estimates, returns, certificates, memoranda, statements or writings, showing classification or over-classification of the cuttings and work on said Districts B and F. Presented 22nd April, 1909.—*Mr. Lennox*.. .. ..*Not printed.*

46*g*. Return to an order of the House of Commons, dated 26th January, 1909, showing the names of all persons appointed to office or employment by the Transcontinental Railway Commission since its creation, showing the county or city from which such person came, the office or employment to which he was appointed, the date of appointment, the salary and allowances attached thereto, the place or district where the work of each employee is done, and the total amount paid each year for all such services up to the end of December, 1908. Presented 22nd April, 1909.—*Mr. Foster*.. .. .. ..*Not printed.*

46*h*. Return to an order of the House of Commons, dated 3rd March, 1909, for a copy of all tenders received for the construction of the following sections of the Eastern Division of the National Transcontinental Railway, together with the itemized schedules of the engineer's estimates of quantities on which the award of contracts was based, the sections referred to being those mentioned in the answer of the Minister of Railways and Canals in the House on the 13th April, 1908, as follows:—

STATEMENT NO. 1.—COMMISSIONERS—EASTERN DIVISION.

Mileage from Moncton.		Description.	No. of One Miles.	Amount of Estimate on which Contracts were let.	Date of	
From	To				Contract.	Completion.
				$ cts.		
0·00	50·00	Moncton to near Chipman	50·00	989,895 90	Mar.14,'07	Sept. 1,'08
50·00	58 55	Near Chipman easterly 8·55 miles	8·55	289,190 62	Aug 23,'07	Aug, 1,'08
58·55	97·60	Near Chipman westerly to I.C.R. crossing	39·05	767,434 95	Mar.28,'08	Sept. 1,'10
97·60	164 00	I.C.R. crossing to Mile 164	66·40	1,898,124 21	" 28,'08	" 1,'10
164·00	195·80	Mile 164 to Grand Falls	31·80	1,646,253 65	" 28,'08	" 1,'10
195·80	256·68	Grand Falls to New Brunswick boundary	60·88	1,385,941 09	" 9,'07	" 1,'08
256·68	309 74	N.B. boundary to 150 miles east of Quebec Bridge	5 143·06	2,377,409 00	" 28,'08	" 1,'10
309 74	459·74	From Quebec Bridge 150 miles eastward	8·89	5,011,346 50	" 9,'07	" 1,'09
		Quebec Bridge link (not included in estimate)	1·11			
459 74	509·74	Quebec Bridge westerly 50 miles	50·00	1,489,537 92	May 15,'06	" 1,'07
509 74	609·74	50 miles west Quebec Bridge to 150 miles west	100·00	3,807,719 54	" 15,'06	" 1,'07
609·74	654·74	150 miles west Quebec Bridge to near Waymontachene	45·00	1,691,073 41	Mar.14,'07	" 1,'08
654·74	656·07	To be included in this contract	1·33			
656·07	877·75	Near Waymontachene to near Harricanaw River	221·68	Not let.		
877·75	1,027·75	Near Harricanaw River to Junction T. & N. O. Ry.	150·00	3,986,901 42	" 14,'07	" 1,'09
1,021·75	1,127·75	Junction T. & N. O. Ry. for 100 miles west.	100·00	3,936,566 00	" 28,'08	" 1,'10
1,027·75	1,171·85	100 miles west of Junction T. & N. O. Ry. to west end of District 'D'	44·10	Not let.		
1,171·85	1,334·35	West end of District 'D' westerly	162·50	"		
1,334·35	1,409·35	From 19½ miles west of Mud River, easterly.	75·00	2,101,499 88	" 28,'08	" 1,'10
1,409·35	1,429·76	" " " to west end of District 'E'	20 41	Not let.		
1,429·76	1,557·80	From westward District 'E' to Lake Superior Junction	128·04	"		
1,557·80	1,804·66	From Lake Superior Junction to west bank of Red River	246·86	13,010,398 92	May 15,'06	" 1,'07

Presented 26th April, 1909.—*Mr. Lennox*.. .. ..*Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

46*i*. Return to an order of the House of Commons, dated 3rd March, 1909, showing the various quantities of work of each description or class actually executed by the several contractors and certified as correct by the engineers and paid for up to 31st December, 1908, upon the several sections of the Eastern Division of the National Transcontinental Railway, where the sections have not been completed, the various chief engineers' estimates of the quantities of the various class of work remaining to be executed, together with an estimate of the cost of completing the same, based on the contractors' prices attached to each tender. Presented 26th April, 1909.—*Mr. Lennox*..*Not printed.*

46*j*. National Transcontinental Railway. Information in reply to questions by Mr. R. L. Borden, M.P. Presented (Senate) 7th May, 1909, by Hon. Sir Richard Cartwright. *Not printed.*

46*k*. Correspondence and reports relative to complaints as to the manner men employed on the Grand Trunk Pacific Railway construction are treated in the hospital at Prince Rupert; the complaint of non-payment of just claims for wages, &c., on the Prince Rupert section of the said railway. Presented 12th May, 1909, by Hon. R. Lemieux. *Not printed.*

46*l*. Supplementary Return to 46*g*. Presented 14th May, 1909.. .. ..*Not printed.*

46*m*. Supplementary Return to No. 46*h*. Presented 14th May, 1909.. .. ..*Not printed.*

47. Return to an address of the House of Commons, dated 25th January, 1909, for a copy of all orders in council, correspondence, reports and other documents and papers, not already brought down, touching or relating to the All-Red Line, so-called, as referred to in the resolution passed by this House on the 9th day of July, 1908, or touching or relating to any similar or substituted proposal for the like purpose. Presented 29th January, 1909.—*Mr. Borden (Halifax)*.. .. ..*Not printed.*

48. General rules and orders in the Exchequer Court in Canada, 1909. Presented 29th January, 1909, by Hon. C. Murphy.. .. ..*Not printed.*

49. Classification of the following departments of the inside Civil Service at Ottawa, by order in council of the 25th January, 1909, as on the 1st September, 1908, viz.:—Agriculture, Auditor General, Customs, Finance, Superintendent of Insurance, Governor General's Secretary, Indian Affairs, Inland Revenue, Justice, Labour, Library of Parliament, Marine and Fisheries, Militia and Defence, Mines, Post Office, Privy Council, Public Printing and Stationery, Public Works, Railways and Canals, Royal Northwest Mounted Police, Secretary of State, Trade and Commerce. Presented 1st February, 1909, by Sir Wilfrid Laurier.. .. ..*Not printed.*

49*a*. Classification of the officers, clerks and employees of the Library of Parliament, as on the first day of September, 1908. Presented 11th March, 1909, by Sir Wilfrid Laurier. *Not printed*

49*b*. Classification and organization of the officers and clerks of the Distribution Office of the Department of the Printing of Parliament, as on the first day of September, 1908. Presented 11th March, 1909, by Sir Wilfrid Laurier.. .. ..*Not printed.*

49*c*. Classification of the permanent officers, clerks and employees of the House of Commons. Presented 11th March, 1909, by the Hon. the Speaker.. .. ..*Not printed.*

49*d*. Organization of the Staff of the House of Commons, with the classification of the various officers, clerks and employees. Presented 11th March, 1909, by the Hon. the Speaker.. .. ..*Not printed*

CONTENTS OF VOLUME 17—*Continued.*

49*e*. Classification of the Department of the Interior (Inside Service) at Ottawa, by order in council of the 1st February, 1909, as on the 1st September, 1908. Presented 1st April, 1909, by Hon. F. Oliver.. .. ..*Not printed.*

49*f*. Order in Council approved by His Excellency the Governor General on the 5th May, 1908, granting authority for the continued employment of certain officers and clerks of the non-permanent branches of the Department of Public Works. Presented 5th April, 1909, by Hon. W. Pugsley.. .. ..*Not printed.*

49*g*. Schedules in connection with the Civil Service Bill. Presented 10th May, 1909, by Hon. S. A. Fisher.. .. ..*Not printed.*

50. Correspondence, &c., relative to the construction of a subway near the Kingston Junction of the Grand Trunk Railway of Canada. Presented 1st February, 1909, by Hon. G. P. Graham.. .. ..*Not printed.*

51. Copy of official communication, addressed by the Minister of Marine and Fisheries, to Commissioner Cassels, respecting the abolition of the patronage system in the Department of Marine and Fisheries. Presented 1st February, 1909.– *Mr. Foster.Not printed.*

52. Minutes of proceedings of the Board of Internal Economy of the House of Commons, pursuant to Rule of the House No. 9, from the 16th December, 1907, to 14th July, 1908, inclusive. Presented 29th January, 1909, by the Hon. the Speaker.. .. ..*Not printed.*

53. Return to an order of the House of Commons, dated 10th February, 1908, showing the number of applications for the release of prisoners and the number granted since the year 1896 by the Minister of Justice before the expiry of sentence, the terms of sentence, the date of release, the reasons therefor as far as expedient, and the name of the solicitor who was interested in procuring the release. Presented 2nd February, 1909.—*Mr. Foster*.. .. ..*Not printed.*

54. Report of the Commissioner, Dominion Police Force, for the year 1908. Presented 2nd February, 1909, by Hon. A. B. Aylesworth.. .. ..*Not printed.*

55. A detailed statement of all bonds or securities registered in the Department of the Secretary of State of Canada since last return, 7th December, 1907, submitted to the Parliament of Canada under section 32, of chapter 19, of the Revised Statutes of Canada, 1906. Presented 2nd February, 1909, by Hon. C. Murphy.. .. .. ..*Not printed.*

56. Return under chapter 125 (R.S.C.), 1906, intituled: 'An Act respecting Trades Unions,' submitted to Parliament in accordance with section 33 of the said Act. Presented 2nd February, 1909, by Hon. C. Murphy.. .. ..*Not printed.*

57 Report of the Ottawa Improvement Commission for the nine months ended the 31st March, 1908. Presented 4th February, 1909, by Hon. W. Paterson.. .. ..*Not printed.*

58. Partial Return to an order of the House of Commons, dated 1st February, 1909, showing what persons have been appointed, transferred, or promoted, respectively, since 1st July, 1908, in the various departments coming under the operation of the Civil Service Act of 1908; the positions and salaries of such persons as have been transferred and promoted at the time of the change; the positions and salaries at present of all who have been so appointed, transferred or promoted, and which of these appointments, transfers or promotions were made in accordance with the present Civil Service Act. Presented 5th February, 1909.—*Mr. Foster*.. .. ..*Not printed.*

58*a*. Partial Return to an address of the House of Commons, dated 1st February, 1909, for a copy of all orders in council, departmental orders, rules and regulations, and schemes of reorganization adopted in the several departments, rules and regulations

CONTENTS OF VOLUME 17—*Continued.*

made by the Civil Service Commissioners, and all other orders, steps and proceedings made, had or taken under or pursuant to the Civil Service Amendment Act, 1908. Presented 8th February, 1909.—*Mr. Borden (Halifax)*.. .. ..*Not printed.*

58*b*. Supplementary Return to No. 58. Presented 8th February, 1909... .. ..*Not printed.*

58*c*. Return to an order of the House of Commons, dated 10th February, 1909, showing how many officials were appointed in the year 1908 to the various departments and brought from the outside service into the inside service under the Civil Service Act, with their names and salaries; and what addition to the various staffs have been made thereby. Presented 11th February, 1909.—*Mr. Sharpe (Ontario)*.. .. ..*Not printed.*

58*d*. Further Supplementary Return to No. 58. Presented 11th February, 1909..*Not printed.*

58*e*. Return to an order of the House of Commons, dated 2nd February, 1909, showing the names of the temporary clerks formerly paid out of Civil Government Contingencies who have been classified under section 7 of the Civil Service Act since the 1st September, 1908, and placed in the third division subdivision B; the position filled by each at the time of classification and the salary paid, the length of service, the age and what examination has been passed; the position to which assigned under the classification and the salary attached; the names of the persons appointed to the Civil Service since 1st September, 1908, under section 47 of the Civil Service Act, the positions to which appointed, the date of appointment, and the salary attached. Presented 11th February, 1909.—*Mr. Foster*. .. ..*Not printed.*

58*f*. Further Supplementary Return to No. 58. Presented 18th February, 1909.*Not printed.*

58*g*. Return to an address of the House of Commons, dated 15th February, 1909, for copies of orders in council by authority of which increases of salary detailed on pages 556, 557, 558, 559, 560, 561, 562, 563 and 564, unrevised *Hansard*, 1909, were granted. Presented 23rd February, 1909.—*Mr. Foster*.. .. ..*Not printed.*

58*h*. Return to an order of the House of Commons, dated 15th February, 1909, showing the name and date of the first appointment, position and salary at time of increase of each clerk or other employee in the outside service of the Department of Public Works at Ottawa, to whom any increase of pay was given on and after the 1st of April, 1908, the amount of such increase or increases, the date on which increase was granted, the date it became effective, and the date on which the increase was paid. 2. A similar return from each of the following Departments: Militia and Defence, Marine and Fisheries, Railways and Canals, Customs, Inland Revenue, Public Printing, Indian Affairs, Auditor General, Finance, Mines and Post Office Department. Presented 23rd February, 1909.—*Mr. Foster*.. .. ..*Not printed.*

58*i*. Return to an address of the House of Commons, dated 15th February, 1909, for copies of orders in council passed from the 1st of May, 1908, to 31st January, 1909, authorizing increases to the employees of the Department of Public Works. Presented 25th February, 1909.—*Mr. Foster*.. .. ..*Not printed.*

58*j*. Orders in Council attached to Sessional Paper No. 58*g* herewith were the only ones passed in connection with the increases of salary detailed on pages 556, 557, 558, 559, 560, 561, 562, 563 and 564, unrevised *Hansard*, 1909. The increases given to the officials employed in the Surveys Branch were granted in accordance with the Act respecting the Department of the Interior, chapter 54, sections 6 and 8, of the Revised Statutes, which relate to the employment and payment of temporary assistants in the Surveyor General's Branch, for the performance of services requiring technical, scientific or professional qualifications. The increases given to the employees on Dominion Lands, Outside Service, School Lands, Immigration and Boundary Surveys were granted under departmental authority. Presented 26th February, 1909, by Hon. F. Oliver.

Not printed.

CONTENTS OF VOLUME 17—*Continued.*

59. Return of orders in council which have been published in the *Canada Gazette* and in the *British Columbia Gazette*, between 1st December, 1907, and 1st December, 1908, in accordance with provisions of subsection (*d*) of section 38 of the regulations for the survey, administration, disposal and management of Dominion lands within the 40-mile railway belt in the province of British Columbia. Presented 5th February, 1909, by Hon. F. Oliver.. .. ..*Not printed.*

60. Return under the provisions of section 57 of the Northwest Irrigation Act, being chapter 61 of Revised Statutes of Canada, 1906, being copies of all Orders in Council, which have been passed or regulations which have been made or forms prescribed by the Minister of the Interior under that Act, and which have been published in the *Canada Gazette*, since the date of the presentation to Parliament of a similar return at its last preceding session. Presented 5th February, 1909, by Hon. F. Oliver.

Not printed.

61. Return under the provision of section 77 of the Dominion Lands Act, chapter 20, of the Statutes of 1908, of section 5 of the Dominion Lands Surveys Act, chapter 21, of the same Statutes, of subsection 2, of section 13 of the Dominion Forest Reserves Act, chapter 56, R.S.C., 1906, of subsection 3 of section 5 of the Rocky Mountains Park Act, chapter 60, R.S.C., 1906, and of subsection 2 of section 18 of the Yukon Act, chapter 63, R.S.C., 1906, being copies of all orders in council, ordinances or regulations which have been passed under any of the above mentioned Acts and which have been published in the *Canada Gazette*, since the date of the presentation to Parliament of a similar return at its last preceding session. Presented to Parliament of a similar return at its last preceding session. Presented 5th February, 1909, by Hon. F. Oliver.. .. ..*Not printed.*

62. Return to an order of the House of Commons, dated 25th January, 1909, for a copy of all correspondence during the last three months with reference to Lachute Mills post office. Presented 8th February, 1909.—*Mr. Perley*.. .. ..*Not printed.*

63. Order in Council, &c., in relation to the issue of $50,000,000 additional stock by the Canadian Pacific Railway Company. Presented 8th February, 1909, by Hon. G. P. Graham.. .. ..*Not printed.*

63*a*. Return (in so far as the Department of the Interior is concerned) of copies of all orders in council, plans, papers, and correspondence which are required to be presented to the House of Commons, under a resolution passed on 20th February, 1882, since the date of the last return under such resolution. Presented 8th February, 1909, by Hon. F. Oliver.. .. ..*Not printed.*

63*b*. Correspondence on the subject of the Canadian Pacific Railway Company securing running rights over the Intercolonial Railway between St. John and Halifax. Presented 8th February, 1909, by Hon. G. P. Graham.. .. ..*Not printed.*

63*c*. Return of lands sold by the Canadian Pacific Railway Company, from the 1st October, 1907, to the 1st October, 1908, and the names of the purchasers. Presented 15th February, 1909, by Hon. F. Oliver.. .. ..*Not printed.*

63*d*. Return to an address of the House of Commons, dated 8th February, 1909, for a copy of any order in council authorizing the Canadian Pacific Railway to increase its capital stock. Presented 18th February, 1909.—*Mr. Maclean (York)*.. .. ..*Not printed.*

63*e*. Further correspondence on the subject of the Canadian Pacific Railway Company securing running rights over the Intercolonial Railway between St. John and Halifax. Presented 22nd February, 1909, by Hon. G. P. Graham.. .. ..*Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

64. Return to an order of the House of Commons, dated 1st February, 1909, showing what sums of money have been paid each of the several holders of stock in the Quebec Bridge Company on account of stock, bonus and interest, respectively; and what amount remains to be paid and to whom. Presented 8th February, 1909.—*Mr. Foster.*
Not printed

65. Return to an order of the House of Commons, dated 1st February, 1909, showing what disposition has been made in detail of the vote of $25,000 under Miscellaneous, for seed grain in Alberta and Saskatchewan. Presented 11th February, 1909, by Hon. F. Oliver.. .. .. .

CONTENTS OF VOLUME 17—*Continued.*

67*e*. Copy of Order in Council constituting a Board of Management for the Government Railways—the Intercolonial and the Prince Edward Island Railway—and naming the members of the said Board of Management. Presented 26th April, 1909, by Hon. G. P. Graham.. .. ..*Not printed.*

67*f*. Return to an order of the House of Commons, dated 5th April, 1909, for a copy of all petitions and correspondence, whether by letter or telegrams, and all plans submitted either to the Railway Department or to the authorities of the Intercolonial Railway, and of all decisions arrived at, relating to the enlargement of the station of the Intercolonial Railway at Cap St. Ignace, or the construction of a new station. Presented 14th May, 1909.—*Mr. Roy (Montmagny).*. .. ..*Not printed.*

67*g*. Return to an order of the House of Commons, dated 5th April, 1909, for a copy of all correspondence, memorials, reports and decisions arrived at respecting the construction of a tank at the Intercolonial Railway station at Cap St. Ignace, and the increased cost to be paid to the Aqueduct Company supplying the water for the engines running on the said railway. Presented 14th April, 1909.—*Mr. Roy (Montmagny)*..*Not printed.*

67*h*. Return to an address of the Senate, dated 18th March, 1909, praying for all petitions presented to the Governor General in Council, asking that the Intercolonial Railway may be placed under the Railway Board, together with all correspondence in connection therewith. Presented 4th May, 1909.—*Hon. Sir Mackenzie Bowell*.. ..*Not printed.*

67*i*. Certified copy of a Report of the Committee of the Privy Council, approved by His Excellency the Governor General on the 20th April, 1909, *re* Intercolonial Railway. Presented (Senate) 30th April, 1909, by Hon. Sir Richard Cartwright.. ..*Not printed.*

68. Return to an order of the House of Commons, dated 1st February, 1909, for the production of all the original applications and tenders filed in the Department of the Interior in respect of Timber Berth No. 1122, and that the same be laid on the Table of the House, said papers not to be part of the archives of this House, but to be returned by the Clerk to the Department of the Interior after inspection. Presented 12th February, 1909.—*Mr. Campbell*... .. ..*Not printed.*

69. Return to an order of the House of Commons, dated 1st February, 1909, showing what lands, at what price, and to what persons or corporations have been sold along the route of the Grand Trunk Pacific for stations, terminal or town site purposes. Presented 12th February, 1909.—*Mr. Foster*.. .. ..*Not printed.*

70. Return to an order of the House of Commons, dated 26th January, 1909, showing, year by year, since 1881, the expenditures charged annually to capital under the caption of Dominion lands, together with a similar statement of the total receipts from sale of lands, town sites, &c., where public domain has been permanently alienated. Presented 12th February, 1909.—*Mr. Ames*.. .. ..*Not printed.*

71. Return to an order of the House of Commons, dated 1st February, 1909, showing the amount of gold, silver and copper coins manufactured by the branch of the Royal Mint in Canada, and the amount of said coin not disposed of since it commenced operation up to 1st January, 1909. 2. How much silver in its crude state has been offered for sale to the management of the Royal Mint from Canadian mines in the year 1908, and what quantity has been accepted. 3. What reason the government gives for not purchasing all the silver in its crude state that is offered. 4. The system used in deciding from whom to make purchases. 5. How many Canadian mines have sold silver to the government, the names of said mines, and the quantity purchased from each. Presented 12th February, 1909.—*Mr. Armstrong*.. .. ..*Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

71*a*. Return to an order of the House of Commons, dated 1st February, 1909, showing the total cost of the Royal Mint to 31st December, 1908; the total expenses of Royal Mint for the calendar year 1908, (*a*) for additions and improvements, (*b*) for maintenance, (*c*) for salaries, (*d*) for bullion copper, silver and gold, respectively; the amount of copper, silver and gold coinage that was struck during that time; and the net profit on each kind of coinage. Presented 31st March, 1909.—*Mr. Foster*.. .. .. ..*Not printed.*

72. Return to an order of the House of Commons, dated 25th January, 1909, showing, in detail, the items comprised in the amount $699,235.52, given as miscellaneous revenue for the month of December, 1908. Presented 12th February, 1909.—*Mr. Ames.* *Not printed.*

73. Return to an order of the House of Commons, dated 25th January, 1909, showing all free mail deliveries established or authorized since the 30th of June, 1908, in towns or villages; all free rural mail deliveries established or authorized since said date, the number of persons served by each such free mail delivery in the community or route for which it has been so established and the cost in each instance. Presented 12th February, 1909.—*Mr. Borden (Halifax)*.. .. ..*Not printed.*

73*a*. Return to an order of the House of Commons, dated 22nd March, 1909, for a copy of all correspondence and memoranda relating to rural mail delivery in the province of Alberta. Presented 17th May, 1909.—*Mr. McCarthy*.. .. ..*Not printed.*

74. General orders issued to the Militia between 28th November, 1907, to 31st January, 1909. Presented 15th February, 1909, by Sir Frederick Borden.. .. ..*Not printed.*

75. Return to an order of the House of Commons, dated 8th February, 1909, in detail showing what disposition has been made of the vote of $35,000 to cover the cost of boring for oil, gas, coal, &c., passed on 15th July, 1908, with a copy of all correspondence, reports, telegrams, memoranda, &c., connected with the matter, giving the district in which the wells were drilled, the cost and present condition of each well, and a copy of all contracts and tenders. Presented 15th February, 1909.—*Mr. Armstrong*..*Not printed.*

76. Return to an order of the House of Commons, dated 25th January, 1909, showing: 1. The number of accidents which occurred at level railway crossings in Canada during the period of five years prior to the 31st of March, 1908. 2. The time where and the places at which these accidents occurred. 3. The alleged cause of the accident in each case. 4. The number of persons killed in each case. 5. The number of persons injured and the nature of the injury in each case. 6. A statement in each case as to whether the crossing was protected or not, and if protected, by what means. Presented 16th February, 1909.—*Mr. Lennox*.. .. ..*Not printed.*

76*a*. Return to an order of the House of Commons, dated 10th February, 1909, showing since the constitution of the Railway Board, in how many cases they have ordered protection of highway-railway crossings, (*a*) by separation of the highway and railway, (*b*) by gates, (*c*) by other means, and the method adopted in each case; how the proceedings were initiated in each case; what order was made as to the expense of the work or service in each; at what points separation of highway and railway was ordered, and the actual or estimated cost in each case; in how many, and what cases applications were refused. Presented 4th March, 1909.—*Mr. Lennox*.. .. ..*Not printed.*

76*b*. Return to an address of the Senate, dated 25th February, 1909, for copies of all requests to the Board of Railway Commissioners by the Minister of Railways, under section 28 of the Railway Act, and also copies of all orders in council made within the last twelve months respecting level crossings by railways over public highways, the dates of making such requests or orders in council to be given. Presented 19th March, 1909.—*Hon. Mr. Ferguson*.. .. ..*Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

77. Return to an order of the House of Commons, dated 1st February, 1909, showing all importations of steel bars, steel ingot, rolled iron and steel, steel rails and structural steel, into the Dominion of Canada, by months, since the 31st day of March, 1908, and up to the 31st January, 1909, showing: (*a*) the quantity imported, (*b*) the country from which imported. (*c*) port of entry, (*d*) the value of the imports, and (*e*) the amount of duty paid thereupon. Presented 18th February, 1909.—*Mr. Boyce.*
Not printed.

78. Return to an order of the House of Commons, dated 8th February, 1909, showing the number of seizures made by the Department of Inland Revenue during the years 1904, 1905, 1906, 1907 and 1908; the date of seizures; by whom seized; what the seizures consisted of; amount realized by the sale of such material seized; and how the seized material was disposed of. Presented 18th February, 1909.—*Mr. Barr.. .. ..Not printed.*

78*a*. Return to an order of the House of Commons, dated 10th February, 1909, showing the number of seizures made by the Department of Customs during the years 1904, 1905, 1906, 1907 and 1908; the date of seizures; by whom seized; what the seizures consisted of; the party from whom seized; amount realized by the sale of such material seized; and how the seized material was disposed of. Presented 11th March, 1909.—*Mr. Barr.*
Not printed.

79. Return showing remissions of interest made under subsection 2 of section 88 of the Indian Act, chapter 81, Revised Statutes of Canada, for the year ended 31st March, 1908. Presented 18th February, 1909, by Hon. F. Oliver.. .. ..*Not printed.*

80. Return to an order of the House of Commons, dated 3rd February, 1909, showing how many sessional clerks and messengers have been appointed to the House of Commons since 1880; their names and the date of their appointments; if appointed by the Internal Economy Commission or otherwise; how many sessional clerks and messengers have been removed from the House of Commons since 1880; their names and the dates of their removal; if removed by the Internal Economy Commission or otherwise. Presented 19th February, 1909.—*Mr. Paquet.. .. ..Not printed.*

81. Copy of an order in council of the 15th February, 1909, relative to the Second Joint Report of the Commission for the demarcation of the meridian of the 141st degree of west longitude (Alaska Boundary), appointed in virtue of the First Article of the Convention between Great Britain and the United States, signed at Washington on the 21st April, 1906; and also a copy of the said Report. Presented 22nd February, 1909, by Hon. F. Oliver.. .. ..*Not printed.*

82. Return to an order of the House of Commons, dated 3rd February, 1909, showing what precautionary measures were taken by the government to combat the introduction of the foot and mouth disease into Canada from United States; what officials were appointed especially for the work, the dates of appointment, length of service, remuneration paid to each as salary or expenses; the present danger, and when the embargo on live stock from the United States was raised. Presented 22nd February, 1909.—*Mr. Sharpe (Ontario).. .. ..Not printed.*

82*a*. Return to an order of the House of Commons, dated 8th February, 1909, showing what States of the United States have been quarantined by order in council by reason of the prevalence of foot and mouth disease in such States; how many inspectors were appointed by the government to prevent the importation of live stock into Canada from quarantine States; at what points such inspectors were stationed; and what salaries these inspectors were paid. Presented 22nd February, 1909.—*Mr. Chisholm (Huron).. .. ..Not printed.*

5654—2½

CONTENTS OF VOLUME 17—*Continued.*

83. Return to an order of the House of Commons, dated 10th February, 1909, showing the quantity of summer-caught white fish, and the value, the pickerel, quantity and value, the sturgeon, quantity and value, exported to the United States for each year, respectively, during the years from November 1893 to November, 1908, from the Manitoba ports. Presented 23rd February, 1909.—*Mr. Bradbury*.. .. ..*Not printed.*

84. Return to an order of the House of Commons, dated 8th February, 1909, showing, in detail, all moneys received by this government from the sale of land, forest, mines, fisheries and other natural resources of the province of Alberta for the last fiscal year. Presented 23rd February, 1909.—*Mr. McCarthy*.. .. ..*Not printed.*

85. Return to an order of the eHouse of Commons, dated 17th February, 1909, showing from whom the wood-working machinery was purchased for Intercolonial Railway shops at Moncton or elsewhere since 1st January, 1908, how much from each and the prices paid; from whom the iron-working machinery was purchased for the Intercolonial Railway shops at Moncton, or elsewhere, since 1st January, 1908, how much from each, and the prices paid, the dates, (*a*) of purchase, and (*b*) of delivery. Presented 23rd February, 1909.—*Mr. Clare*.. .. ..*Not printed.*

85*a*. Return to an order of the House of Commons, dated 22nd March, 1909, showing the claims of any person or persons in Nova Scotia against the government by reason of personal damages or losses of animals or damages to property on account of the Intercolonial Railway, settled or paid between 1st June and 31st December, 1908, together with the names and addresses of such persons, the nature of their claims, how settlement was effected, and on what date settlement was effected in each case. Presented 26th March, 1909.—*Mr. Rhodes*.. .. ..*Not printed.*

86. Return to an address of the House of Commons, dated 15th February, 1909, for a copy of all orders in council, regulations, reports, correspondence, documents, and papers under, relating to or touching the several treaties of 11th April, 1908, between His Majesty and the United States of America, relating to or touching any action, proceeding, appointment, reports or other matter made, had or undertaken under or pursuant to the said treaties or either of them. Presented 25th February, 1909.—*Mr. Borden (Halifax)*.. .. ..*Not printed.*

87. Return to an order of the House of Commons, dated 26th February, 1909, for copy of a report of Thomas Costello, special officer of customs, on the subject of the Woollen Industry in Great Britain. Presented 26th February, 1909.—*Mr. Paterson.*
Printed for both distribution and sessional papers.

88. Copy of special agreement for the submission of question relating to Fisheries on the North Atlantic Coast under the general treaty of Arbitration concluded between the United States and Great Britain on the 4th day of April, 1908. Presented 26th February, 1909, by Hon. A. B. Aylesworth.. .. ..*Not printed.*

89. Return to an order of the House of Commons, dated 22nd February, 1909, showing how many heads of stock there are on the respective experimental farms and what they consist of; the estimated value of the different kinds, and for what purposes they are utilized; how many acres there are in each experimental farm; how many acres there are under cultivation on each farm. Presented 26th February, 1909.—*Mr. Staples*.. .. ..*Not printed.*

90. Declaration of Principles, North American Conservation Conference. Presented 26th February, 1909, by Hon. S. A. Fisher..*Printed for both distribution and sessional papers.*

91. Statement of insurance paid on the St. Lawrence route on merchandise, provisions and grain, from 1900 to 1907, both years inclusive. Presented (Senate) 28th January, 1909, by Hon.. Sir Richard Cartwright.. .. ..*Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

92. Statement of the affairs of the British Canadian Loan and Investment Company (Limited), for the year ended the 31st of December, 1908, also a list of the shareholders for the same year, in compliance with the Loan Corporation Act. Presented (Senate) 25th February, 1909, by the Hon. the Speaker.. .. ..*Not printed.*

93. Copy of the Progress Report, Hudson Bay Railway Surveys, 1st February, 1909. Presented 4th March, 1909.—*Hon. G. P. Graham*.. .. ..*Not printed.*

93*a*. Return to an order of the House of Commons, dated 8th February, 1909, showing all surveys made to date in the prosecution of the proposed Hudson Bay Railway. Presented 8th March, 1909.—*Mr. Meighen*.. .. ..*Not printed.*

94. Return to an order of the House of Commons, dated 26th January, 1909, of all correspondence, papers and reports of engineers or others, relating to the authorization and construction of a canal from Lake Simcoe to Newmarket, including all contracts entered into, the amount of money so far paid, and the estimated cost of the completed work, with plans showing the capacity of the canal, and for all statements and estimates of the commercial reasons for the work. Presented 4th March, 1909.—*Mr. Foster*.. .. ..*Not printed.*

94*a*. Return to an order of the House of Commons, dated 22nd March, 1909, showing: 1. Who were employed to value the land of the right of way of the canal from Holland River to Newmarket, and what other duties than valuation of lands these parties were entrusted with. 2. The remuneration of each of these valuators. 3. How long they were employed, and upon what terms. 4. (*a*) What properties they valued, (*b*) at what amount or rate in each case, (*c*) the acreage of each property, (*d*) in how many cases, by names, the valuations were accepted by the owners, (*e*) in how many cases, by names, the valuations were finally rejected by the owners, (*f*) in what cases expropriation proceedings were resorted to, and (*g*) the result as compared with valuators' figures. 5. What titles to all properties have been required. Presented 31st March, 1909.—*Mr. Lennox*.. .. ..*Not printed.*

95. Return to an order of the House of Commons, dated 8th February, 1909, for a copy of all lists of voters as prepared by the enumerators and completed by the deputy returning officers for the several polling subdivisions in the electoral riding of Calgary, in the province of Alberta, and used in the recent general election for the House of Commons. Presented 4th March, 1909.—*Mr. McCarthy*.. .. ..*Not printed.*

95*a*. Return to an order of the House of Commons, dated 8th February, 1909, showing the names of the deputy returning officer, poll clerk, scrutineer or agent, or any other officer who acted, respectively, as such in the several polling subdivisions in the electoral district of Calgary in the recent general election for the House of Commons. Presented 4th March, 1909.—*Mr. McCarthy* .. ..*Not printed.*

95*b*. Return to an order of the House of Commons, dated 15th March, 1909, showing, in respect of the election for the House of Commons, held in the county of Montcalm, on the 26th of October, 1908, and in respect of each polling subdivision (*a*) the number of votes polled for each candidate; (*b*) the total number of valid votes polled; (*c*) the number of rejected ballots; (*d*) the number of spoiled ballots; (*e*) the number of voters on the revised voters' list; (*f*) the number of ballot papers in possession of the deputy returning officer at the hour of the opening of the poll; (*g*) the number of ballot papers remaining unused in the hands of the deputy returning officer at close of the pool; (*h*) the name and the address of the returning officer and names and addresses of each of his deputies and poll clerks; (*i*) all correspondence between the government, or any officer thereof, and the returning officer, or any deputy returning officer or poll clerk or, any candidate in respect of said election. Presented 22nd March, 1909.—*Mr. Ames*.. .. ..*Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

95c. Return to an order of the House of Commons, dated 17th February, 1909, for a copy of all lists of voters as prepared by the enumerators and completed by the deputy returning officers for the several polling subdivisions in the electoral riding of Qu'Appelle, and used in the recent general election for the House of Commons; also for a return showing the boundaries of the said polling subdivisions, and the names of the enumerators, deputy returning officers, poll clerks, candidates' agents or scrutineers who acted for each poll. Presented 22nd March, 1909.—*Mr. Lake..Not printed.*

96. Return to an order of the House of Commons, dated 11th February, 1909, for a copy of a report made by Charles Olin to the Department of the Interior, of his visit to Sweden for that department in 1907-8, and of all correspondence leading up to his appointment to make such trip, and in any way relating thereto. Presented 4th March, 1909.—*Mr. Goodeve.. .. .. .

CONTENTS OF VOLUME 17—*Continued.*

100*c*. Supplementary Return to No. 100. Presented 5th April, 1909.. .. ..*Not printed.*

100*d*. Return to an order of the House of Commons, dated 5th April, 1909, for a copy of all papers, letters and correspondence relating to, and an itemized statement of, the account of Mr. H. M. Howell in regard to the surrender of St. Peters Reserve. Presented 27th April, 1909.—*Mr. Smyth*.. .. ..*Not printed.*

100*e*. Supplementary Return to No. 100. Presented 19th May, 1909.. .. ..*Not printed.*

101. Supplementary Convention respecting the commercial relations between France and Canada, entered into at Paris on the 23rd day of January 1909, between His Majesty and the President of the French Republic. Presented 8th March, 1909, by Hon. W. S. Fielding.. .. .. *Printed for both distribution and sessional papers.*

102. Correspondence relating to Supplementary Convention respecting commercial relations between Canada and France. Presented 10th March, 1909, by Hon. W. S. Fielding. *Printed for both distribution and sessional papers.*

103. Return to an order of the House of Commons, dated 22nd February, 1909, for a copy of all evidence, reports, correspondence, writings, papers and documents in possession or control of the Department of Inland Revenue, including all correspondence and written statements between the department or its officials or agents, and the government of Manitoba, or the Attorney General or other officials or agents of that province, in reference to the quality of coal oil sold in Manitoba, and accidents caused by coal oil there during the year 1908, and connected with recent investigations into the cause of these disasters. Presented 8th March, 1909.—*Mr. Schaffner*.. .. ..*Not printed.*

104. Copies of cablegrams between His Excellency the Governor General and the Honourable the Secretary of State for the Colonies respecting the International Boundary Waters Treaty. Presented 8th March, 1909, by Sir Wilfrid Laurier.. .. ..*Not printed.*

104*a*. International Boundary Waters Treaty, signed at Washington, 11th January, 1909, (2) Rider attached by United States Senate. Presented 15th March, 1909, by Hon. W. S. Fielding.. .. ..*Not printed.*

105. Return to an order of the House of Commons, dated 16th January, 1909, showing the number and amount of temporary loans made by the government since 1st July, 1906, the bank or corporation with which each was made, the conditions and cost of the same. Presented 9th March, 1909.—*Mr. Foster*... .. ..*Not printed.*

105*a*. Return to an order of the House of Commons, dated 26th January, 1909, showing the amount and conditions of each permanent loan made by the government since 1st July, 1896, the bank or corporation through which it was made, the cost of each, in (*a*) brokerage and commission, (*b*) stamps, &c., (*c*) legal or other services, and (*d*) discounts, the net result of each loan and per cent of interest upon the same. Presented 24th March, 1909.—*Mr. Foster*.. .. ..*Not printed.*

105*b*. Supplementary Return to No. 105*a*. Presented 31st March, 1909.. .. .. ..*Not printed.*

105*c*. Return to an order of the House of Commons, dated 8th March, 1909, showing what expenses under the following heads: (*a*) bank commission, (*b*) underwriting charges, (*c*) brokerage, and (*d*) advertising, were incurred by the government on each of the following loans, and to whom the several amounts were paid, viz:—

	£ s. d.
1874 loan extended to 1911, 4 per cent..	1,753,830 4 10
1875-8 Public Works guaranteed loan, 4 per cent..	3,200.000 0 0
Loan of 1884, 3½ per cent..	5,000,000 0 0

CONTENTS OF VOLUME 17—*Continued.*

Canada reduced 1885, 4 per cent.. .. .. 6,443,136 2 9
Loan of 1885, 4 per cent.. .. .. 4,000,000 0 0
C. P. R. land grant 1888, 3½ per cent.. .. .. 3,093,700 0 0
4 per cent loan of 1908-12, 4 per cent.. .. .. 1,379,600 0 0
3½ per cent loan 1908, (February issue) 3½ per cent.. .. .. 3,000,000 0 0
3¾ per cent loan 1908, 3¾ per cent.. .. .. 5,000,000 0 0
3½ per cent loan 1908 (October issue) 3½ per cent.. .. .. .. 5,000,000 0 0
3¾ per cent loan 1909, 3¾ per cent.. .. .. 6,000,000 0 0

Payable in Canada—
Reduced loan of 1883, extended 3½ per cent.. .. .. $1,425,800 00

Dominion stock issue—
A reduced in 1897, 3½ per cent.. .. .. 58,899 67
B reduced in 1897, 3½ per cent.. .. .. 325,900 00
C reduced in 1897, 3½ per cent.. .. .. 49,066 34
E extended for 10 years, from 1st July, 1906, 3¾ per cent.. 2,500,000 00
Dominion stock issue 1891, 3½ per cent.. .. .. 404,202 00

$5,000,000 for one month; Bank of Montreal, Ottawa; 2nd March, 1909; 4 per cent. Presented 6th April, 1909.—*Mr. Sharpe (Ontario).. .. ..Not printed.*

105*d*. Return to an order of the House of Commons, dated 26th January, 1909, showing, in respect of the sinking fund in connection with each outstanding loan forming on 31st March, 1908, part of the funded public debt: (*a*) term of loan, (*b*) the sinking fund rate, (*c*) the amount that has been each year set aside, including earnings of interest reinvested, (*d*) the aggregate amount to credit of sinking fund of that particular loan on 31st March, 1908, (*e*) the aggregate amount which may be reasonably expected to stand to credit of sinking fund on date when loan shall fall due, and if extended at the end of final period, (*f*) percentage which accrued sinking fund and its earnings will bear to the nominal amount of loan on date of expiry. Presented 6th April, 1909.—*Mr. Ames.. .. ..Not printed.*

105*e*. Supplementary Return No. 105*c*. Presented 19th April, 1909.. .. ..*Not printed.*

105*f*. Return to an address of the House of Commons, dated 8th February, 1909, for a copy of all orders in council, correspondence and papers, including prospectuses, in relation to the loans negotiated by the Minister of Finance from the 1st January, 1907, to date. Presented 19th April 1909.—*Mr. Foster.. .. ..Not printed.*

105*g*. Return to an order of the House of Commons, dated 26th January, 1909, showing, in detail, the contingent or nominal liabilities of the Dominion government on the 1st of January, 1909; that is to say, a statement of all amounts which might under existing legislation become exigible, such as earnable railway subsidies, government guaranteed loans, deficiencies which might require to be made good, &c. (See also 109*a*.) Presented 19th April, 1909.—*Mr. Ames.. .. ..Not printed.*

106. Return to an order of the House of Commons, dated 22nd February, 1909: 1. Showing the approximate area of coal and timber lands, respectively, in each of the provinces of Saskatchewan and Alberta (*a*) owned by private individuals or companies, (*b*) leased by the government to private individuals or companies; and the approximate area in each province on which mining or lumbering operations are actually being carried on. 2. The approximate amount of revenue collected by the government between 1st January, 1906, and the 31st December, 1908, on account of (*a*) payments for coal lands; (*b*) coal royalties; (*c*) bonuses and rentals on timber lands; (*d*) timber dues; (*e*) hay lands; (*f*) grazing lands, and (*g*) irrigation areas within each of the above provinces. Presented 11th March, 1909.—*Mr. Lake.. .. ..Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

106*a*. Return to an order of the House of Commons, dated 22nd February, 1906, showing how many acres have already been taken up in Manitoba, Saskatchewan and Alberta, respectively, by homestead and pre-emption, by railway lands, by Hudson Bay lands; by other corporations or persons; by waste, swamps or mountainous land unfit for tilling; by lake areas, including Winnipeg, Winnipegosis, Manitoba, Big Quill, Birch and Beaver; and the area in square miles of each province above named. Presented 11th March, 1909.—*Mr. Hughes*.. .. ..*Not printed.*

106*b*. Return to an order of the House of Commons, dated 8th March, 1909, for a copy of all applications, advertisements, tenders, leases, correspondence and papers of every description, with respect to timber berths Nos. 1316, 1317, 1318, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1360, 1361, 1362, 1363, 1364 and 1365. Presented 30th March, 1909.—*Mr. Bradbury*.. .. ..*Not printed.*

106*c*. Return to an order of the House of Commons, dated 22nd March, 1909, for a copy of all correspondence, communications in writing and documents, to the Minister of the Interior, or any official of the department, and the replies or communications from the minister or any official of the department, since 11th January, 1905, relating to the transfer of certain swamp lands in the Big Grass Marsh, in the province of Manitoba, to His Majesty King Edward VII., for the purposes of the province of Manitoba. Presented 30th March, 1909.—*Mr. Molloy*.. .. ..*Not printed.*

106*d*. Supplementary Return to an order of the House of Commons, dated 3rd March, 1909, showing with respect to leases granted since 30th June, 1896, for timber on Dominion lands in British Columbia, the names and addresses of lessees, the date, term and acreage of each lease, and the bonus received for the same. Presented 5th April, 1909. —*Mr. Taylor (New Westminster)*.. .. ..*Not printed.*

106*e*. Return to an order of the House of Commons, dated 5th April, 1909, for a copy of all correspondence, reports, papers, and communications in the possession of the Dominion Lands Office at Prince Albert and the Department of the Interior at Ottawa, in connection with the application for patent for the N.E. ¼ section 10, township 47, range 1, west 3rd meridian of A. A. Strachan, and the performance of his homestead duties. Presented 16th April, 1909.—*Mr. Lake*.. .. ..*Not printed.*

107. Return to an order of the House of Commons, dated 1st February, 1909, showing the total amount received by the Winnipeg *Free Press* from all the departments of the government from 1st July, 1896, to 1st January, 1909, specifying amount each year. Presented 11th March, 1909.—*Mr. Herron*.. .. ..*Not printed.*

107*a*. Supplementary Return to No. 107. Presented 26th March, 1909.. .. .. ..*Not printed.*

108. Return to an order to the House of Commons, dated 26th January, 1909, showing approximately the total amount of available cash on deposit to the credit of the government on the last day of each month during the period between the 1st of April, 1907, and the 31st December, 1908. Presented 11th March, 1909.—*Mr. Ames*.. ..*Not printed.*

109. Return to an order of the House of Commons, dated 26th January, 1909, showing to date the statement found on page 15 of the Budget Speech of 1898. Presented 11th March, 1909.—*Mr. Ames*.. .. ..*Not printed.*

109*a*. Return to an order of the House of Commons, dated 26th January, 1909, showing, in detail, the contingent or nominal liabilities of the Dominion government on the 1st January, 1909; that is to say, a statement of all amounts which might under existing legislation become exigible, such as earnable railway subsidies, government guaranteed loans, deficiencies, which might require to be made good, &c. (Supplementary to No. 105*g*.) Presented 11th March, 1909.—*Mr. Ames*.. .. ..*Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

110. Return to an order of the House of Commons, dated 17th February, 1909, for a copy of all correspondence passing between the Department of Justice and the officers of New Westminster Penitentiary or other persons whatsoever, relating to the visit or proposed visit of detectives to Bill Miner during his incarceration in said penitentiary; also of the report of the Inspector of Penitentiaries after investigating the circumstances connected with Miner's escape, and of the evidence on which such report is based; also a copy of telegram sent from the said penitentiary to the department or its officers respecting Miner's escape, and of such telegrams as received and of telegrams sent and received in answer within two weeks from such escape. Presented 12th March, 1909.—*Mr. Taylor (New Westminster)*.. .. ..*Not printed*..

111. Return to an order of the House of Commons, dated 17th February, 1909, showing what amounts the government has paid property owners for damages caused by the holding up of water in the Otonabee River, between Hastings and Peterboro', and the names of the parties receiving settlements. Presented 15th March, 1909.—*Mr. Sexsmith.*

Not printed.

111*a*. Return to an order of the House of Commons, dated 17th February, 1909, showing what amounts the government has paid property owners in or around Stony Lake for damages caused by the rising of water, and who they were. Presented 15th March, 1909.—*Mr. Sexsmith*.. .. ..*Not printed.*

111*b*. Return to an order of the House of Commons, dated 8th February, 1909, showing what measures, if any, have been taken by the government to lower the waters of Lakes Simcoe and Couchiching; what moneys, if any, have been expended for this purpose, the date of expenditure, and persons superintending the same; the future intention of the government in this direction, for the purpose of reclaiming thousands of acres of first-class arable land. Presented 25th March, 1909.—*Mr. Sharpe (Ontario).*

Not printed.

112. Return to an order of the House of Commons, dated 3rd March, 1909, for the production of the original tenders received in reponse to advertisement calling for tenders for the erection of the building at Kingston R. M. C., intended for barracks accommodation, for stables; and also for a Return showing the advertisement and the papers in which inserted; said papers not to be part of the archives of this House, but to be returned by the Clerk to the Department of Public Works after inspection. Presented 15th March, 1909.—*Mr. Edwards*.. .. ..*Not printed.*

112*a*. Return to an order of the House of Commons, dated 3rd March, 1909, for the production of the original tenders received in response to advertisement calling for tenders for the erection of the Veterinary Hospital at Kingston, and also for a return showing the advertisement and the papers in which inserted, said papers not to be part of the archives of this House, but to be returned by the Clerk to the Department of Public Works after inspection. Presented 24th March, 1909.—*Mr. Edwards*.. .. ..*Not printed.*

113. Return to an order of the House of Commons, dated 22nd February, 1909, for a copy of all papers, letters, telegrams and communications, with reference to the complaint against and conviction and fine of F. Macdonald Jacobs, of Caughnawaga Reserve, for cutting cordwood upon territory occupied by him on the reserve, and to have refund of dues or fine. Presented 15th March, 1909.—*Mr. Boyce*.. .. .. ..*Not printed.*

114. Return to an address of the House of Commons, dated 17th February, 1909, for a copy of all correspondence, letters, despatches, memoranda, &c., between the Imperial government, or any member thereof, and the Governor General, government or any member thereof, relating to or bearing upon the question of Canada contributing to the support of the British fleet, or purchasing ships of her own, or assisting in any way in maintaining with the mother country the supremacy of the seas. Presented 17th March, 1909.—*Mr. Worthington*.. .. ..*Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

115. Return to an order of the House of Commons, dated 22nd February, 1909, for a copy of all reports, memorials, documents and correspondence in possession of the government with regard to the superannuation and to making provision for the superannuation of officers and members of the crew of the winter or ice-breaking steamers owned or in the employ of the government. Presented 17th March, 1909.—*Mr. Warburton.*
Not printed.

116. Return to an order of the House of Commons, dated 17th February, 1909, for a copy of all correspondence between J. H. Davis and the Department of Marine and Fisheries referring to the fisheries of Manitoba; and of all petitions and correspondence from the Fisherman's Union, Gimli, Manitoba, to and with the said department. Presented 17th March, 1909.—*Mr. Bradbury*.. .. ..*Not printed.*

116*a*. Return to an order of the House of Commons, dated 17th February, 1909, for a copy of all correspondence or petitions received from F. W. Colclaugh, while he was inspector of fisheries for Manitoba, referring to the operations of commercial companies and others. Presented 29th March, 1909.—*Mr. Bradbury*.. .. ..*Not printed.*

117. Return to an order of the House of Commons, dated 8th March, 1909, for a copy of all reports, correspondence, statements, receipts, vouchers and documents of every description with respect to the granting and payment of the railway subsidy authorized under 6-7 Edward VII., chapter, 40, section 1, subsection 16. Presented 17th March, 1909.—*Mr. Ames*.. .. ..*Not printed.*

118. Return to an address of the House of Commons, dated 1st March, 1909, for a copy of all correspondence, documents and papers relating to the construction, or proposed construction, of a line of railway from a point at or near Caledonia to Liverpool, not exceeding 29 miles, referred to in the Acts of 1903, chapter 57, section 23*d*, and all orders in council, reports, contracts, agreements and other papers, relating to the same matters. Presented 18th March, 1909.—*Mr. Borden (Halifax)*.. .. ..*Not printed.*

119. Return to an address of the Senate dated 3rd March, 1909, calling for a statement showing the imports of oxide of aluminum for the years 1903, 1904, 1905, 1906, 1907, 1908, with value. Also a statement showing the exports of aluminum for the same years, with values. Presented 10th March, 1909.—*Hon. Mr. Domville*.. ..*Not printed.*

120. Return to an order of the House of Commons, dated 1st February, 1909, showing the number of applications made to the Board of Railway Commissioners for the privilege of crossing railway tracks with telephone and telegraph wires and with water mains, each, over the said period from 1st February, 1904, to the 1st January, 1908; the total number of applications granted over said period; the total number of applications refused; the date of each application; the date each application was granted; the length of time from the application to the granting of same; and what time should elapsed before the board should give its decision. Presented 23rd March, 1909.—*Mr. Barr*.. .. ..*Not printed.*

121. Return to an order of the House of Commons, dated 17th February, 1909, giving detailed items of the sum of $10,646.93, being revenue received from Kingston Penitentiary, other than from sale of twine, as shown on page L—36 of the Auditor General's Report, and stating what proportion of such revenue was derived from sales to officers of the penitentiary, with the names of such officers, and the amounts and nature of the goods purchased by them. Presented 23rd March, 1909.—*Mr. Barnard*....*Not printed.*

122. Return to an order of the House of Commons, dated 1st March, 1909, for a copy of all papers and correspondence between the government and the government of British Columbia with reference to the reduction of Indian Reserves in that province, proportionately to the decrease of Indian population as provided for by order in council. Presented 23rd March, 1909.—*Mr. Barnard*.. .. ..*Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

123. Return to an order of the House of Commons, dated 17th February, 1909, for a copy of all correspondence, reports and papers of every description treating of or in connection with the application of or grant to Francis Percival Aylwin, of the city of Ottawa, of a tract of land in the province of Alberta for irrigation purposes. Presented 23rd March, 1909.—*Mr. Magrath*.. .. ..*Not printed.*

124. Return to an order of the House of Commons, dated 3rd March, 1909, showing the amounts on deposit in the Government Savings Department on 1st October, 1889, 1st October, 1896, and 1st October, 1897 and 1898; how many officials were employed in connection with the management of this fund in the years 1888, 1890, 1898, 1900 and 1908; the cost of the management of this fund in the years 1888, 1890, 1898, 1900 and 1908. Presented 23rd March, 1909.—*Mr. Sharpe (Ontario)*.. .. ..*Not printed.*

124*a*. Supplementary Return to No. 124. Presented 5th April, 1909.. .. .. ..*Not printed.*

125. Return to an order of the House of Commons, dated 1st February, 1909, showing what operations, including all expenditures, were carried on last year under the fishing leases granted to F. H. Markey, of Montreal, for Great Slave Lake, Nelson and other rivers; J. K. McKenzie, of Selkirk, for Lesser Slave Lake and Arthabaska Lakes; Archibald McNee, for parts of James Bay; Coffey and Merritt, Cedar Lake; The Capital City Packing Company (Limited) and the William Hickey Company (Limited). Presented 24th March, 1909.—*Mr. Bradbury*.. .. ..*Not printed.*

126. Return to an order of the House of Commons, dated 26th January, 1909, showing the names and places of registry of the several American fishing vessels seized by the Dominion fishery cruisers for illegal fishing in Canadian waters since 1900, and of the courts in which action for penalties or forfeitures were instituted, the mode of service of the writs or other process on such foreign fishing vessels, and in what court tried and a statement of the fines imposed, or proceeds of sale realized, and how such fines or proceeds of forfeiture were appropriated; also a copy of the judgment of the High Court of Justice for Ontario in the case of Rex vs. American Gasoline Fishing Boat. Presented 24th March, 1909.—*Mr. Macdonell*.. .. ..*Not printed.*

127. Return to an address of the House of Commons, dated 1st February, 1909, for a copy of all orders in council, reports, correspondence, deeds, conveyances, regulations, conditions and other documents relating to (*a*) the grant or conveyance to the Grand Trunk Railway Company of Canada of a portion of Major Hill Park, so-called, for the site of an hotel, or touching the use or purpose for which the said conveyance was made or proposed; (*b*) the grant or conveyance to the said company or to the Ottawa Railway Terminal Company or to any other person or corporation of any lands in or adjoining the city of Ottawa for the purpose of or in connection with the building of a station at Ottawa or for other railway purposes. Presented 24th March, 1909.—*Mr. Borden (Halifax)*.. .. ..*Not printed.*

128. Return to an order of the House of Commons, dated 3rd March, 1909, showing how many post offices have been transferred in the province of Manitoba since 1st November, 1908; who the former postmasters were, and who the present postmasters are, with the names of offices; and the reasons assigned for the transfers. Presented 24th March, 1909.—*Mr. Roche*.. .. ..*Not printed.*

128*a*. Return to an order of the House of Commons, dated 8th March, 1909, for a copy of all applications, correspondence, reports, documents and papers relating to the establishment and service of a post office at Hand Hills, Alberta. Presented 13th April, 1909.—*Mr. Magrath*.. .. ..*Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

128*b*. Return to an order of the House of Commons, dated 22nd March, 1909, for a copy of all correspondence, petitions and reports addressed to the government, or Post Office Department, and all correspondence and orders consequent thereon, relating to the change of the name of the post office of Weymouth North, and of the post office of Weymouth Bridge to Weymouth. Presented 19th April, 1909.—*Mr. Jameson.*
Not printed.

129. Return to an order of the House of Commons, dated 8th March, 1909, showing the names and addresses of the several immigration agents in Canada whose duty it is to locate or settle immigrants upon their arrival in Canada, what salary or remuneration has been paid to each such agent for the fiscal year 1908 and up to the 1st February, 1909, and on what basis they are paid. Presented 25th March, 1909.—*Mr. Macdonell.*
Not printed.

129*a*. Return to an order of the House of Commons, dated 8th March, 1909, showing the names and addresses of the several inspectors of immigrants employed by the government; what salary or remuneration has been paid to each such inspector during the fiscal year 1908 and up to the 1st February, 1909; and on what basis they are paid. Presented 25th March, 1909.—*Mr. Herron*.. .. ..*Not printed.*

129*b*. Return to an order of the House of Commons, dated 10th February, 1909, for a copy of all correspondence, reports and documents between the Department of the Interior and the immigration agents in the United States; and between the Department of the Interior and the colonization societies since the 1st of January, 1908. Presented 30th March, 1909.—*Mr. Paquet*.. .. ..*Not printed.*

130. Return to an order of the House of Commons, dated 15th March, 1909, showing the amounts paid during the years 1903-4, 1905-6 and 1907-8 by the following Departments: (*a*) Marine and Fisheries, (*b*) Railways and Canals, (*c*) Customs, (*d*) Post Office, (*e*) Militia and Defence, and (*f*) Public Works, to the following persons, firms and companies, viz.—The Wilson Gas Buoys Company, the Canadian Fog Signal Company, James Murphy, William R. Blakiston, James Holliday, Allison Davie, J. B. Coté, Adolph Huot, Joseph Samson, Samson & Philion, E. Pelletier, Napoleon Mercier, Severin Martel, Michel Thibodeau, Edmond Belanger & Co., Marie & Themblay, Terreau & Racine, Rock City Tobacco Company, J. N. Martineau, George Marchand, Jean Drolet, Elie Amyot, Charles A. Parent, A. N. Melvin, W. G. Robertson, Wm. Robertson & Co., Howell & Co., St. John Iron Works, Charles McDonald, John A. Moore, Wm. J. Vroom, John A. McAvity Bros., George McAvity, Patrick J. Mooney, Polson Bros. or Polson Iron Works, Merwin & Company, F. L. Brooks & Company, F. S. Brooks, Safety Company, Submarine Company, Wm. J. Allen and Mr. Willard. Presented 25th March, 1909.—*Mr. Sharpe (Ontario)*.. .. .. *Not printed.*

131. Return to an order of the House of Commons, dated 25th January, 1909, showing in relation to each dog-fish reduction plant or establishment for the reduction of dog-fish erected by or for the government or maintained in whole or in part by the government (*a*) the cost of construction, (*b*) the cost of maintenance for each year, (*c*) the location, (*d*) the quantity of dog-fish treated thereat in each year, and (*e*) the amount realized from the sale or disposal thereof in each year. Presented 25th March, 1909.—*Mr. Borden (Halifax)*.. .. ..*Not printed.*

132. Return to an order of the House of Commons, dated 17th February, 1909, showing the amount of money paid by the government, including all branches of the service, from 1st January, 1897, to 1st January, 1909, to the Logberg Printing Company, Winnipeg. Presented 26th March, 1909.—*Mr. Bradbury*.. .. ..*Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

132*a*. Supplementary Return to No. 132. Presented 6th April, 1909.. . . .. ..*Not printed.*

133. Return to an order of the House of Commons, dated 22nd March, 1909, showing the amount of produce of the following lines shipped to Great Britain or other countries in cold storage, or cooled air chambers, during the years 1907 and 1908:—Apples, in barrels or other packages, pears, plums, tomatoes, fresh meat, in pounds, fowl, fish, butter, eggs and cheese; to what country or countries they were shipped, and their condition on landing; the system of cold storage principally in use on the steamships carrying such produce. Presented 26th March, 1909.—*Mr. Sproule*.. .. ..*Not printed.*

134. Return to an address of the House of Commons, dated 10th February, 1909, for a copy of all correspondence, telegrams, papers, reports and valuations of officers or experts, and orders in council, in connection with the purchase, removal and repairing of the dredge *Industry* and parts thereof, including scow, boilers and parts. Presented 29th March, 1909.—*Mr. Foster*.. .. ..*Not printed.*

135. Copy of a letter sent to all officers of the Department of Public Works charged with the purchase of materials and supplies, and the certifying of accounts for same, under the different branches of the chief architect, the chief engineer and the superintendent of telegraphs. Presented 31st March, 1909, by Hon. W. Pugsley.. .. .. ..*Not printed.*

136. Return to an order of the House of Commons, dated 8th February, 1909, showing the Ross Rifles, Mark I. and Mark II., or any other description of Ross Rifle, used by the Canadian rifle team at Bisley last year in the regular team competitions; what Ross rifles of any description were used in the Bisley competitions, regular or extra series matches, by any member of the Canadian team, or any Canadian marksman engaging in such matches; with the name of the individual, and if in the employ of the Ross Rifle Company; the description of the rifle, and in what way it differs from the Ross Rifle, Mark I. and Mark II., both as to length of barrel and such expert accessories as wind gauges, sights, globe or ring, spirit levels, &c., if a target rifle or a service rifle, and if to be adopted by the government for the militia; and where the rifle was manufactured in toto. Presented 1st April, 1909.—*Mr. Worthington*.. .. ..*Not printed.*

137. Return to an address of the House of Commons, dated 10th February, 1909, for a copy of all correspondence, papers, reports, estimates, orders in council, &c., in connection with the surveys of and boring in, and called for tenders for dredging or excavation in the St. John Harbour and Courtney Bay, or either of them, during the year 1908; a copy of the advertisements, names of the papers in which they were inserted, the tenders received and dates, the names of the tenderers and the amount of each tender; which tender, if any, was accepted, the deposit required, and in which bank it was deposited. Presented 6th April, 1909.—*Mr. Daniel*.. .. ..*Not printed.*

137*a*. Return to an address of the House of Commons, dated 10th February, 1909, for a copy of all correspondence, papers, orders in council, advertisements, tenders, contracts, &c., in connection with dredging in the harbour of St. John, New Brunswick, covering the area dredged by Gershen B. Mayes, the Dominion Dredge Company, John Moore, or other parties, during the years 1904, 1905, 1906, 1907 and 1908; the quantities dug under each contract, the amounts paid to each contractor, the date of each payment, and to whom. Presented 11th May, 1909.—*Mr. Daniel*.. .. ..*Not printed.*

138. Return to an order of the House of Commons, dated 1st February, 1909, showing: 1. The total amount expended on public works by this government in the riding of Bonaventure prior to the general elections of 1900. 2. The total amount expended by the government in this riding, (*a*) on public works, and (*b*) in aid of the railways and other undertakings since said general election, and the estimated additional amount

CONTENTS OF VOLUME 17—*Continued.*

required, (*a*) to complete these public works, and (*b*) to meet the subsidies or grants in aid of railways or other undertakings. 3. The various public works undertaken by the Government in this riding between the general election of 1896 and the general election of 1900, the dates when the several works were undertaken, whether they were let by public advertisement, tender, and contract, or how otherwise, and the sums of money, stated separately, expended upon these works prior to the election of 1900. 4. Which of these several works were completed and which of them remained uncompleted at the date of the election in 1900. 5. The sums of money, stated separately, expended in or towards completing these works since the said election of 1900, and the dates of expenditure. 6. The various public works undertaken and carried on by the Government since the general election of 1900, the dates when the several works were inaugurated or commenced, the sums of money, stated separately, expended upon these works, and the estimated amount required to complete such of these works as have not been completed; and showing whether these works were done by tender or contract, or how otherwise. 7. The moneys granted by the Government by way of subsidy aid to railways or other undertakings in said riding since the general election of 1900, the sums of money paid under these grants and the estimated amount required to meet future payments. 8. The public works commenced and the money obligations incurred and moneys expended for public works within said riding of Bonaventure during the month of October last. Presented 13th April, 1909.—*Mr. Lennox*.. .. .. ..*Not printed.*

139. Return to an order of the House of Commons, dated 1st March, 1909, showing the names and addresses of all half-breeds living in the United States who have been allotted scrip since January, 1902, and to whom said scrip was sent or delivered. Presented 13th April, 1909.—*Mr. Bradbury*.. .. ..*Not printed.*

140. Return to an address of the House of Commons, dated 1st March, 1909, for a copy of all correspondence, orders in council, papers and other documents relating to the disallowance, or application therefor, of an Act of the Legislature of the province of Ontario, intituled: 'An Act respecting Cobalt Lake and Kerr Lake,' being chapter 15 of the Statutes of 1907. Presented 13th April, 1909.—*Mr. Clarke (Essex)*..*Not printed.*

141. Return to an order of the House of Commons, dated 15th February, 1909, showing: 1. The total mileage of railways authorized to be constructed under charters granted by the Dominion Parliament, between the period from 1888 to 1908, inclusive, exclusive of the Grand Trunk Railway Company, the Canadian Pacific Railway Company, the Canadian Northern Railway Company, and the Grand Trunk Pacific Railway Company. 2. Exclusive of the above named companies, the number of miles actually constructed under said charters. 3. The number of said companies so incorporated. 4. The number of those that have actually constructed any portion of the railway so authorized. 5. The number of said charters which have lapsed. 6. The number granted an extension of time for construction. 7. The number granted two such extensions. 8. The number granted three such extensions or more. Presented 19th April, 1909.—*Mr. Middlebro*.. .. ..*Not printed.*

141*a*. Return to an order of the House of Commons, dated 17th February, 1909, giving a list of railway charters granted since 1st January, 1900, other than to the Grand Trunk, Grand Trunk Pacific, the Canadian Northern and the Canadian Pacific Railway Companies, showing those whose powers have lapsed, and the length of each of the proposed roads and branches, the date of charters and renewals, if any, the total mileage constructed, the capital stock authorized, subscribed and paid up. Presented 19th April, 1909.—*Mr. Magrath*.. .. ..*Printed for both distribution and sessional papers.*

CONTENTS OF VOLUME 17—*Continued.*

142. Return to an order of the House of Commons, dated 1st March, 1909, showing: 1. At what work the Translation Branch of the House of Commons is employed. 2. The number of permanent translators in this branch. 3. The total amount of salaries paid to these translators. 4. The documents, reports and other matters which have been translated in this branch in the last twelve months, not including the pages already translated in the preceding year and repeated for the purpose of the report, nor the tables already made and translated and repeated for the purpose of completing these reports and documents, which have been most recently translated. 5. The total number of pages translated by the permanent translators. 6. The total number of persons, outside of the Translation Branch, to whom has been given translation work. 7. How much this outside work has cost, and how many pages have been translated in this way. 8. What Blue-books, if any, and other matters, excepting *Hansard*, is translated in other departments other than the Translation Branch of the House of Commons, and in what departments. Presented 19th April, 1909.—*Mr. Boyer.*
Not printed.

143. Certified copy of a Report of the Committee of the Privy Council, approved by His Excellency on the 19th April, 1909.—Regulations of the Civil Service Commission with reference to entrance into and promotion in the service. Presented 20th April, 1909, by Hon. C. Murphy.. .. ..*Not printed.*

144. Return to an order of the House of Commons, dated 25th January, 1909, showing all armouries built since 1st July, 1896, giving situation, cost, capacity, officials employed in each, with yearly expenses of each armoury, distributed under the head of maintenance, improvements, extensions and salaries, with the number of troops actually making use of the same, and to what extent each year. Presented 20th April, 1909.—*Mr. Foster*.. .. ..*Not printed.*

145. Return to an address of the House of Commons, dated 22nd March, 1909, for a copy of all correspondence, reports, documents, orders in council, in the possession of the Government relating to the establishment of a Geodetic Service Bureau, and the commencement of a Geodetic Survey in Canada. Presented 20th April, 1909.—*Mr. MacLean (Lunenburg)*.. .. ..*Printed for both distribution and sessional papers.*

145*a*. Supplementary Return to No. 145. Presented 27th April, 1909.
Printed for both distribution and sessional papers.

145*b*. Further Supplementary Return to No. 145. Presented 28th April, 1909.
Printed for both distribution and sessional papers.

146. Return to an order of the House of Commons, dated 17th February, 1909, for a copy of all correspondence respecting the improvements made in the Assiniboia River near Portage la Prairie, in September and October, 1908; and of all papers, vouchers, orders, resolutions, returned cheques, &c., in any way relating to the said work or to carrying out of same. Presented 22nd April, 1909.—*Mr. Staples*.. .. ..*Not printed.*

147. Return to an order of the House of Commons, dated 25th January, 1909, showing the various statistical and special informative publications issued by the several departments of the Government, the number and pages of each, the number and cost of each for the year 1908, the number of persons employed in their preparation, the salaries paid to each person so employed, the number of special employees for engraving or illustrating these publications, and the salaries and expenses of the same, including work and apparatus, the firm or printing company publishing the same, and the amount paid in each case for printing and binding. The above return is not to include the regular reports of the departments, but to be so presented as to show the

CONTENTS OF VOLUME 17—*Continued.*

name of each statistical or special publication, the number of such printed, and the number of pages in each, the number of officials employed in the preparation of the publication, the total cost of each, and the total cost of all such publications for the year 1908. Presented 22nd April, 1909.—*Mr. Foster*.. .. ..*Not printed.*

148. Return to an order of the House of Commons, dated 5th April, 1909, for copies of all correspondence between the Marine and Fisheries Department and any person or persons relative to the concellation of the certificate of Thomas Bibbington, or the removal of his name from the list of certified pilots for the port of Victoria, B.C. Presented 22nd April, 1909.—*Mr. Barnard*.. .. ..*Not printed.*

149. Return to an order of the House of Commons, dated 8th February, 1909, showing all contracts for the carrying of mail, which expire in the month of April, 1909, that have been renewed without asking for tenders; where the routes are situated, the price paid for carrying the mail, and the name of the carrier, and his place of residence in each case. Presented 27th April, 1909.—*Mr. Armstrong*.. .. ..*Not printed.*

150. Copy of an ordinance respecting the hearing and decision of disputes in relation to mining lands in the Yukon Territory. Presented (Senate) 5th May, 1909, by Hon. Sir Richard Cartwright.. .. ..*Not printed.*

151. Copy of an ordinance respecting the imposition of a tax upon ale, porter, beer or lager beer imported into the Yukon Territory. Presented (Senate) 5th May, 1909, by Hon. Sir Richard Cartwright.. .. ..*Not printed.*

152. Return to an order of the House of Commons, dated 11th February, 1909, for a copy of all communications, accounts, reports and other papers received by the Department of Public Works from A. Edgar Hanson, E. T. P. Shewan, or other person or persons, relating to the survey of the St. John River channel between Fredericton and Woodstock, and of all letters, instructions, &c., from the department to Mr. Hanson, Mr. Shewan, or other person or persons in connection therewith. Presented 7th May, 1909. —*Mr. Crocket*.. .. ..*Not printed.*

153. Return to an address of the House of Commons, dated 22nd March, 1909, for a copy of all orders in council directing that repairs be made on different wharfs in the county of Soulanges, a copy of all correspondence, reports, accounts and pay-rolls relating to the valuation of these works, the payment and the list of names of all who were employed as day labourers on these works; a copy of all letters, reports and recommendations exchanged between the Government and all other perons relating to the choice of men to be engaged on these works and those who should be refused employment; a copy of the report of accounts produced by Mr. Alfred Bissonette, wharfinger at St. Zotique, and Mr. Treflé Poirier, wharfinger on the wharfs of the canal and River St. Lawrence, in the parish of Des Cèdres, and of those of Mr. Isaïe Lalonde, son of Albert, farmer, of St. Zotique; a copy of accounts for furnishing wood, iron, cement, sand and stone used in the building of said wharfs, and also a statement of the materials purchased as aforesaid, paid for by the department, and which were not used because they were considered unfit for the building of these wharfs. Presented 11th May, 1909.—*Mr. Lortie*.. .. ..*Not printed.*

154. Return to an address of the House of Commons, dated 8th February, 1909, for a copy of all orders in council, correspondence, papers and other documents between the Government or any member thereof, and any person or persons, referring in any way to the drainage of the Nation River, running through the township of Matilda and Winchester, in the county of Dundas, from the year 1904. Presented 11th May, 1909.— *Mr. Broder*.. .. ..*Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

155. Return to an order of the House of Commons, dated 5th April, 1909, showing the amount of money received from the Government by the *Canada Posten* of Winnipeg during the years 1907 and 1908. Presented 12th May, 1909.—*Mr. Bradbury*..*Not printed.*

156. Farming in Canada.—Report of the Scottish Commission on Agriculture in Canada, 1908. Presented 12th May, 1909, by Hon. F. Oliver.. .. ..*Not printed.*

157. Return to an order of the House of Commons, dated 5th April, 1909, for a copy of all correspondence and reports respecting the Colonization and Repatriation Society of Lake St. John from 1900 to this date, and a detailed statement of the moneys paid to the society and of the manner in which they have been expended between these dates. Presented 14th May, 1909.—*Mr. Girard*.. .. ..*Not printed*

158. Return to an address of the Senate, dated 19th March, 1909, calling for copies of all correspondence and documents from the Pacific Cable Board on the working and revenue of the Pacific cable and all information on the subject of a state-owned Atlantic cable and Empire cables generally. Presented 13th May, 1909.—*Hon. Mr. Belcourt*.. .. ..*Not printed.*

159. Return to an address of the Senate, dated 29th April, 1909, for copies of all correspondence between the Honourable Sir Frederick Borden, Minister of Militia and Defence, Mr. Crowe and others, relating to the admission of Newfoundland into the Dominion as a province of the same. Presented 13th May, 1909.—*Hon. Sir Mackenzie Bowell.* *Not printed.*

160. Return to an order of the House of Commons, dated 5th April, 1909, for a copy of all documents, complaints, correspondence and decisions arrived at relating to a contract of lease entered into between Alphonse Laberge, lessor, and the Government of the Dominion of Canada, lessee, of date 20th day of July, 1904. Presented 14th May, 1909. —*Mr. Roy (Montmagny)*.. .. ..*Not printed.*

161. Return to an order of the House of Commons, dated 22nd March, 1909, for a copy of all correspondence, tenders and documents in connection with the construction of an ice-breaking steamer for Northumberland Straits, let to Messers. Vickers, Sons & Maxim; also the same in connection with the construction of a lighthouse tender and buoy steamer for the Great Lakes, by Messrs. Swan, Hunter, Wigham & Richardson. Presented 15th May, 1909.—*Mr. Currie (Simcoe)*.. .. ..*Not printed.*

162. Order in Council granting authority for the exemption from payment of the Chinese Capitation Tax in certain cases. Presented 17th May, 1909, by Sir Wilfrid Laurier. *Not printed.*

163. Return to an order of the House of Commons, dated 3rd March, 1909, showing with respect to prosecutions since 1906 for violation of postal law, the nature of each offence alleged, the place of residence of person charged, and the result of each trial and penalty imposed. Presented 17th May, 1909.—*Mr. Taylor (New Westminster).* *Not printed.*

164. Return to an order of the House of Commons, dated 8th March, 1909, for a copy of all reports, specifications, offers, tenders, contracts, alterations of contract, correspondence and documents of every description relating to or in connection with the contract of Thadee Desbiens for an extension to the Chicoutimi pier; and the same in connection with the contract of the General Construction Company, for work done by the dredge *Algonquin* at at near said pier. Presented 18th May, 1909.—*Mr. Ames*....*Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

164*a*. Return to an order of the House of Commons, dated 8th March, 1909, for a copy of all petitions, reports, specifications, offers, tenders, contracts or papers, of any description in connection with the protection pier at Rivière du Moulin, near Chicoutimi; Saguenay County, P.Q. Presented 19th May, 1909.—*Mr. Ames*.. .. .. ..*Not printed.*

165. Return to an order of the House of Commons, dated 5th April, 1909, showing how many seining licenses for fishing in Pacific coast waters are now current; to whom they have been granted; the area covered by each license, and how many of these licenses are being operated by the original licensees, and how many by aliens. Presented 18th May, 1909.—*Mr. Cowan*.. .. ..*Not printed.*

165*a*. Return to an order of the House of Commons, dated 8th March, 1909, showing: 1. How many licenses to fish and pack lobsters in the coast waters of Prince Edward Island have been issued by the Dominion Government since 1st January, 1904, to this date, and to whom same were issued. 2. A copy of any petitions, requests, or correspondence received by the Government from any person or persons, or corporations since 1st January, 1904, asking for licenses to fish and pack lobsters in said province. 3. The number of new licenses likely to be issued by the Government during the present year. Presented 18th May, 1909.—*Mr. Fraser*.. .. ..*Not printed.*

165*b*. Return to an order of the House of Commons, dated 5th April, 1909, showing the names of all persons residing in the town of Liverpool, Nova Scotia, or in its vicinity, who were paid fishing bounties in the year 1908, and the names of all persons residing in Liverpool, Nova Scotia, or in the vicinity thereof, to whom seine trap licenses were issued in 1908, and the amounts paid for the same in each case. Presented 19th May, 1909.—*Mr. Crosby*.. .. ..*Not printed.*

166. Return to an address of the Senate, dated 18th March, 1909, calling for copies of all charges,—complaints made by Mr. Joseph Girard or others to the Prime Minister, or any member of the Government, against the Lake St. John Colonization Society. Presented 18th May, 1909.—*Hon. Mr. Tessier*.. .. ..*Not printed.*

167. Return to an order of the House of Commons, dated 8th March, 1909, for a copy of all correspondence, communications in writing and documents from the grand secretary, or any other officials of the Fishermen's Union of Nova Scotia, or any branch or station of the said union, to the Minister of Marine and Fisheries or to any official of the department, and the replies or communications from the minister or any official of the department since the 1st of January, 1907. Presented 19th May, 1909.—*Mr. Borden (Halifax)*.. .. ..*Not printed.*

168. Return to an order of the House of Commons, dated 13th January, 1908, showing all wharfs, piers, breakwaters, and other public works of a similar character which have been constructed at the expense of Canada, since 1st January, 1897, or for which public money has been voted or appropriated since that date, giving the amount expended or appropriated in each instance, the total cost of each such work, the estimated total cost in each case where the work has not yet been completed, the name of the place where the work is situated, the cost of annual maintenance and upkeep of each such work, and the amount of annual revenue derived therefrom in each instance. Presented 19th May, 1909.—*Mr. Borden (Halifax)*.. .. ..*Not printed.*

169. Return to an order of the House of Commons, dated 8th February, 1909, showing how many hogs have been killed during each month from the 1st of November, 1907, to 1st November, 1908, inclusive, by the following packing companies: the Laing Pack. and Prov. Co., Ltd., Montreal; the Collingwood Pack. Co., Ltd., Collingwood; the Williams Davis Co., Ltd., Harriston; the George Matthews Co., Ltd., Hull; the George Mat-

CONTENTS OF VOLUME 17—*Continued.*

thews Co., Ltd., Brantford, the George Matthews Co., Ltd., Peterborough; the Whyte Packing Co., Ltd., Brantford; the Canadian Packing Co., Ltd., London, and the number of hogs condemned, including intestines, during the same period. Presented 19th May, 1909.—*Mr. Beattie*.. .. ..*Not printed.*

170. Copy of correspondence between the Government of Canada and the British Government on the subject of Imperial Naval Defence. Presented 19th May, 1909, by Sir Wilfrid Laurier.. .. ..*Not printed.*

171. Return to an order of the Senate, dated 12th May, 1909, calling for copies of the petitions, letters patent and telegrams sent by the citizens of the parish, or of the township, and of the village of Laterrière, in the county of Chicoutimi, asking for a subsidy for the Ha-Ha Bay Railway Company, or any other railway company, to build a railway from Jonquière, or near thereto, to St. Alphonse. Presented 19th May, 1909.—*Hon. Mr. Choquette*.. .. ..*Not printed.*

REPORTS, RETURNS AND STATISTICS

OF THE

INLAND REVENUES

OF THE

DOMINION OF CANADA

FOR THE YEAR ENDED MARCH 31

1908

PART I - EXCISE

PRINTED BY ORDER OF PARLIAMENT

OTTAWA
PRINTED BY S. E. DAWSON, PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1908

[No. 12—1909.]

To His Excellency the Right Honourable Sir Albert Henry George, Earl Grey, Viscount Howick, Baron Grey of Howick, in the County of Northumberland, in the Peerage of the United Kingdom and a Baronet; Knight Grand Cross of the Most Distinguished Order of Saint Michael and Saint George, &c., &c., Governor General of Canada.

MAY IT PLEASE YOUR EXCELLENCY :

I have the honour to transmit to Your Excellency the RETURNS AND STATISTICS of Inland Revenues of the Dominion of Canada, for the Year ended March 31, 1908, as prepared and laid before me by the Deputy Minister of Inland Revenue.

All of which is respectfully submitted.

WM. TEMPLEMAN,
Minister of Inland Revenue.

CONTENTS

	Pages.
Report of the Deputy Minister of Inland Revenue, for the Fiscal Year ended March 31, 1908..	i to xxiv
Financial Statements, as detailed below.....	1 to 60
Statistics, Hydraulic Rents, &c. (Appendix A), as detailed below.....	61 to 111
Expenditures, &c. (Appendix B), as detailed below....	112 to 164
Index, Alphabetical....	*Vide end.*

FINANCIAL

No. of Statements.		Pages.
1	General Revenue Account—Showing amount of Revenue accrued and collected from all sources during the year ended March 31, 1908..	3
2	General Expenditure Account—Showing the cost of collecting the above	4-5
3	Excise Collection Divisions—In account with Revenue	6 to 9
4	" " Expenditure	10 to 13
5	Hydraulic Rents, &c.—Summary Statement of Lessees account..	14
6	Bridges, Ferries, &c.—Lessees, &c., of—In account with Revenue	15
7	Preventive Service—Expenditure Account	16
8	Food Inspection " "	17
9	Bill Stamps—Distributors of—In account with Inland Revenue Department	18
10	Law Stamps " " " "	19
11	Sundry Minor Revenues	20
12	" Expenditures	21
13	Comparative Statement of Excisable Articles taken for consumption, during the years ended June 30, 1906, the nine months ended March 31, 1907, and the year ended March 31, 1908, respectively	22-23
14	Statement showing the amounts deposited monthly (by Inland Revenue Officers and others) to the credit of the Honourable the Receiver General on account of each of the above Revenues, respectively	24 to 31
15	Comparative Monthly Statement of Excise Revenue accrued—Showing increase or decrease of Revenue yielded by each article, respectively, during each month as compared with the respective period of the previous year	28-29
16	Refunds—Statement of—Showing names of parties to whom, and under what authority, duties were refunded	36 to 51
17	Departmental Expenditure—Showing Expenditure on account of the Inside Service of the Department	52
18	Weights and Measures, Gas, Electric Light and Law Stamps—Statement showing Revenue accrued	53
19 (a)	Weights and Measures—Inspection Districts—In account with Revenue	54-55
19 (b)	" Old " " "	46
20 (a)	" Inspection Districts—In account with Expenditure	55-58
20 (b)	" Old " " "	59
21	Gas Inspection Districts—In account with Revenue	60-61
22	" " " Expenditure	62-63
23	Electric Light Inspection Districts—In account with Revenue	64-65
24	" " " Expenditure	66
25	Statement showing the amount voted, and the Expenditure authorized, for each Service for 1907-1908	67
26	Statement showing the transactions in connection with the manufacture of Methylated Spirits	68-69

STATISTICS (Appendix A.)

EXCISE.

	Spirits.	Malt.	Malt Liquor.	Manufactured Tobacco.	Raw Leaf Tobacco.	Canada Twist Tobacco.	Cigars.	Petroleum.	Bonded Manufactures.	Acetic Acid.	Methylated Spirits.
	Pge	Pge	Pge	Pge	Pge	Pge	Pge	Pge	Pge	Pge	Pge
Return of Manufactures—Showing the number of Licenses issued and Fees collected, the materials used, the quantity produced, the amount of duties collected, ex-manufactory, and the amount of duties accruing upon excisable articles warehoused	72	80	86	88	..	....	99	....	107	114	....
Comparative Statement of the above, for the nine months ended March 31, 1907, and the year ended March 31, 1908, respectively	73	81	87	89	....	....	101	....	109	114	....
Return of Distilleries—Showing their transactions during the year ended March 31, 1908	74	....	....	....	....	..	....	....	....	....	....
Return of Warehouse Transactions—Showing the quantity of excisable goods remaining in bonded warehouses of each Collection Division, respectively, from previous years; quantity placed in warehouse ex-factory during the year ended March 31, 1908, placed in warehouse from other Collection Divisions; also, quantity ex-warehoused for consumption, with duty accrued thereon; ex-warehoused to be rewarehoused in other Collection Divisions; ex-warehoused for exportation; also quantity used in bonded factories, and remaining in warehouse March 31, 1908	77	83	....	90	93	....	102	..	111	....	....
Comparative Statement of the above, for the nine months ended March 31, 1907 and the year ended March 31, 1908, respectively	79	85	...	91	95	....	103	....	113	...	....
Return of Revenue collected from Canada Twist Tobacco	....	....	..	....	....	96	....	....	....	...	....
Comparative Statement of the above, for the nine months ended March 31, 1907, and the year ended March 31, 1908, respectively	....	....	....	....	....	97	....	...	....	..	....
Return of Petroleum and Naphtha—Showing the quantity inspected during the year ended March 31, 1908	....	....	....	....	....	....	....	104	....	....	....
Comparative Statement of Petroleum and Naphtha inspected during the nine months ended March 31, 1907 and the year ended March 31, 1908, respectively	....	....	....	....	....	....	....	105	....	....	....
Methylated Spirits—Statement showing the quantity of raw material on hand at beginning of year, raw material used, quantity produced and how disposed of	....	....	..	....	....	....	....	....	..	....	115

HYDRAULIC AND OTHER RENTS.

34	Amount due from each Lessee or Purchaser, July 1, 1906	116 to 121
	" accrued during the year ended March 31, 1908	
34 (*a*)	" paid by each Lessee or Purchaser, during the year ended March 31, 1908	
	" remaining due by each Lessee or Purchaser on March 31, 1908	

SESSIONAL PAPER No. 12

EXPENDITURES—(Appendix B.)

— —	Inside Service.	Excise.	Minor Expenditures.	Weights and Measures.	Gas.	Electric Light.	Adulteration of Food.
	Page.	Page.	Page.	Page.	Page.	Page.	Page.
SALARIES.							
Paid to each Officer employed in collecting Revenue....							
SUPERANNUATION.							
How much deducted from each Officer's salary.....							
INSURANCE FEES.							
How much deducted from each Officer's salary.....	147	122	144	150	156	161	144
RETIREMENT.							
How much deducted from each Officer's salary....							
CONTINGENCIES.							
Authorized by the Department for office rent, fuel, travelling expenses, &c.....							

	Pages.
Distribution of Seizures	142
List of persons employed during the year ended March 31, 1908....	164
" " a portion of the year ended March 31, 1908.....	173

REPORT

OF THE

DEPUTY MINISTER OF INLAND REVENUE

To the Hon. Wm. Templeman,
Minister of Inland Revenue.

Sir,—Herewith I have the honour to submit statements of the Inland Revenues collected by this department during the Fiscal Year ended March 31, 1908, with the usual information as to the cost of collection, and statistics respecting the sources whence these revenues were derived.

The following summary comparison shows the accrued revenue for the Fiscal Years ended June 30, 1904, 1905, 1906, for the Nine Months ended March 31, 1907, and the Fiscal Year ended March 31, 1908.

	1904	1905	1906	1907 Nine months.	1908
	$	$	$	$	$
Excise	13,126,593	12,719,191	14,201,534	11,930,153	16,013,662
Public Works	4,687	4,863	4,623	2,732	4,802
Weights and Measures, Gas and Law Stamps	110,416	114,309	125,753	94,123	137,207
Electric Light	23,457	27,810	35,100	25,951	42,520
Other Revenues	569	1,614	3,102	1,306	941
Methylated Spirits	68,326	68,121	65,530	42,665	54,509
Totals	13,334,048	12,935,908	14,435,642	12,096,930	16,253,641

DETAILS of Excise Revenue accrued during the undermentioned Fiscal Years :—

	1	2	3	4	5
	1904	1905	1906	1907 Nine months.	1908
	$	$	$	$	$
Spirits	6,672,149	5,950,632	6,795,900	5,807,742	7,537,979
Malt Liquor	9,039	9,124	10,003	6,913	11,470
Malt	1,137,556	1,140,639	1,292,443	1,042,881	1,485,386
Tobacco	4,127,679	4,412,374	4,842,348	4,065,129	5,656,880
Cigars	1,070,823	1,103,743	1,146,936	912,758	1,184,180
Acetic Acid	2,701	7,694	1,656	1,944	3,314
Manufactures in bond	45,343	51,141	56,115	41,822	66,544
Seizures	4,413	2,352	3,501	1,597	3,476
Other receipts	56,889	41,492	52,632	49,367	64,433
Methylated spirits	68,326	68,121	65,530	42,665	54,509
Totals	13,194,918	12,787,312	14,267,064	11,972,818	16,068,171

The quantity of spirits produced during the Fiscal Year was 6,849,763 proof gallons, as compared with 5,061,389 proof gallons produced in the previous nine months. The raw material used in its production being as follows :—

	Lbs.
Malt	7,679,776
Indian corn	72,997,200
Rye	14,921,209
Wheat	3,117,070
Oats	595,093
Barley	.....
Molasses	17,212,802

The transactions of the several distilleries will be found stated in detail in Appen dix A (Statement No. 3), pages 64 and 65.

	Proof galls.
There was on April 1, 1907, in process of manufacture	340,760
Manufactured during the Fiscal Year	6,849,763
Returned to distilleries for re-distillation—Duty paid, 463	
" " " In bond, 1,433,533	
	1,433,996
Received into distilleries from other sources—Duty paid	11,803
" " " In bond	.....
Total	8,636,322

This was disposed of as follows :

	Proof Gallons.
Placed in warehouse	8,186,765
Fusil oil written off	13,555
Deficiency arising from rectification	8,655
Remaining in process of manufacture March 31, 1908, by actual stock-taking	416,860
Written off	10,487
Total	8,636,322

SPIRITS :—

The following statement shows the warehousing transactions in spirits during the Fiscal Year ended March 31, 1908, and the four preceding Fiscal Years.

Fiscal Years.	1 In Warehouse at beginning of year.	2 Warehoused during the year. Ex-distillery.	3 Otherwise housed.	4 Taken for consumption.	5 Exported.	6 Used in Bonded Factories.	7 Otherwise accounted for.	8 For Re-distillation.	9 In Warehouse at end of year, including transits.
	Pf. Galls.	Pf. Galls.	Pf. Galls.	Pf. Galls.	Pf. Galls.	Pf. Galls.	Pf. Galls.	Pf. Galls.	Pf. Galls.
1903-1904	10,785,088	6,323,439	225,329	3,481,287	180,291	405,663	193,851	748,823	12,323,941
1904-1905	12,323,941	6,774,392	160,925	3,112,843	211,525	363,471	209,046	848,209	14,514,164
1905-1906	14,514,164	7,878,966	239,480	3,545,785	277,905	450,499	205,433	1,118,568	17,034,420
1906-1997 (nine months)	17,034,420	5,920,522	157,351	3,033,439	303,594	372,047	182,526	1,007,136	18,213,551
Totals	54,657,613	26,897,319	783,085	13,173,354	973,315	1,591,680	790,856	3,722,736	62,086,076
Annual average of four fiscal years ended Mar. 31, 1907	14,575,363	7,172,618	208,823	3,512,894	259,551	424,448	210,895	992,729	16,556,287
1907-1908	18,213,551	8,186,765	325,015	3,918,657	412,859	638,539	245,971	1,433,533	20,075,772

It will be of interest to note the gradual development of a foreign demand for Canadian distillery products.

The quantities exported being as follows :

	Proof Gallons.
1903–1904	180,291
1904–1905	211,525
1905–1906	277,905
1906–1907 (nine months)	303,594
1907–1908	412,859

The following statement exhibits the entire quantities upon which duties were collected during the several Fiscal years recited therein. To accord with the figures shown in Financial Statement No. 13, p. 23 :—

Fiscal Years.	Canadian Spirits.		Imported Spirits used in Bonded Factories. Paid difference between Customs and Excise Duty.	Total quantities upon which duty was collected.	Memorandum of Revenue accrued, including License Fees.
	Paid duty Ex-distillery.	Paid duty Ex-warehouse.			
	Pf. Gallons.	Pf. Gallons.	Pf. Gallons.	Pf. Gallons.	$
1903-1904	6,458	3,481,287	225,326	3,713,071	6,672,149
1904-1905	200	3,112,843	160,842	3,273,885	5,950,632
1905-1906	3,765	3,545,785	239,432	3,788,982	6,795,900
1906-1907 (nine months)	4,475	3,033,439	157,325	3,195,239	5,807,742
Totals	14,898	13,173,354	782,925	13,971,177	25,226,423
Average	3,973	3,512,894	208,780	3,725,647	6,727,046
1907-1908	8,655	3,918,657	325,015	4,252,327	7,537,979

MALT :

The following statement shows the transactions in Malt during the Fiscal Year ended March 31, 1908, and the four preceding Fiscal Years :—

Fiscal Years.	1	2	3	4	5	6	7	8	9
	In Warehouse at beginning of year.	Manufactured during the year.	Imported.	Increase by absorption.	Taken for consumption.	Exported.	Otherwise accounted for.	In Warehouse at end of year including transits,	Memorandum of Revenue accrued, including License Fees.
	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	$
1903–1904	31,454,210	68,503,928	4,158,218	623,592	75,430,347	376,936	2,253,306	26,679,359	1,137,556
1904–1905	26,679,359	75,357,218	3,878,089	811,286	75,517,352	498,960	2,824,310	27,885,330	1,140,639
1905–1906	27,885,330	90,089,573	3,470,197	649,819	85,699,102	528,400	3,248,754	32,618,663	1,292,443
1906–1907 (nine months.)	32,618,663	79,682,511	1,056,315	674,022	69,176,871	303,550	2,422,575	42,128,515	1,042,881
Total	118,637,562	313,633,230	12,562,819	2,758,719	305,823,672	1,707,846	10,748,945	129,311,867	4,613,519
Annual average of four Fiscal Years	31,636,683	83,635,528	3,350,085	735,658	81,552,979	455,425	2,866,385	34,483,165	1,230,272
1907–1908	42,128,515	99,577,820	472,433	743,595	98,579,733	355,200	2,472,181	41,515,249	1,485,386

TOBACCO:

The following statement shows the transactions during the Fiscal Year ended March 31, 1908, and the four preceding Fiscal Years, respectively, in Tobacco, Snuff and Cigarettes.

Fiscal Years.	1	2	3	4	5	6	7	8	9	10
	In Warehouse at beginning of year.	Manufactured during the year.	Taken for consumption.	Exported.	Otherwise accounted for.	In Warehouse at end of year, including transits.	Raw Leaf taken for consumption.	Canadian Twist taken for consumption.	Total Tobacco taken for consumption.	Duty collected thereon, including License Fees.
	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	$
1903–1904	1,343,063	13,488,306	13,160,660	163,829	69,329	1,437,551	12,139,700	47,771	25,348,131	4,127,679
1904–1905	1,437,551	14,388,104	14,164,325	181,220	68,536	1,411,574	12,387,376	32,867	26,584,568	4,412,374
1905–1906	1,411,574	15,588,289	15,289,576	155,432	65,310	1,489,545	12,638,620	36,340	28,964,536	4,842,348
1906–1907 (nine months)	1,489,545	12,381,013	12,101,678	114,322	21,451	1,633,107	11,386,331	15,992	23,504,001	4,065,129
Totals	5,681,733	55,845,712	54,716,239	614,803	224,626	5,971,777	49,552,027	132,970	104,401,236	17,447,530
Average	1,515,128	14,892,190	14,590,997	163,947	59,900	1,592,474	13,213,874	35,459	27,840,330	4,652,675
1907–1908	1,633,107	17,238,977	17,112,591	141,465	23,110	1,594,918	14,962,407	13,447	32,088,445	5,656,880

CIGARS:

The following statement shows the transactions in Cigars during the Fiscal Year ended March 31, 1908, and the four preceding Fiscal Years.

Fiscal Years.	1	2	3	4	5	6	7	8
	In Warehouse at beginning of Year.	Manufactured during the Year.	Assessment to bring production up to Standard.	Taken for Consumption.	Exported.	Otherwise accounted for.	In Warehouse at end of year, including transits.	Memorandum of Revenue accrued including License Fees.
	No.	No.	No.	No.	No.	No.	No.	$
1903-1904	24,760,130	183,048,907	15,745	180,485,202	278,450	123,900	26,937,230	1,070,823
1904-1905	26,937,230	188,044,370	37,887	186,110,777	162,250	26,775	28,719,685	1,103,743
1905-1906	28,719,685	190,941,283	29,139	193,827,342	144,575	376,925	25,341,265	1,146,936
1906-1907 (nine months)	25,341,265	154,462,182	399,078	154,253,260	40,500	86,315	25,822,450	912,758
Total	105,758,310	716,496,742	481,849	714,676,581	625,775	613,915	106,820,630	4,234,260
Average	28,202,916	191,065,798	128,493	190,580,422	166,873	163,711	28,485,501	1,129,136
1907-1908	25,822,450	207,291,596	53,319	200,133,255	29,400	12,875	32,991,835	1,184,180

The revenue derived from goods manufactured in bond during the Fiscal Year ended March 1908, and the four preceding Fiscal Years, has been as follows :—

1903–1904	$ 45,343
1904–1905	51,141
1905–1906	56,115
1906–1907 (nine months	41,822
1907–1908	66,524

Acetic Acid :

The revenue derived from acetic acid during the Fiscal Year ended March 31, 1908, and the four preceding Fiscal Years, was as follows :—

1903–1904	$ 2,701
1904–1905	7,694
1905–1906	1,656
1906–1907 (nine months)	1,945
1907–1908	3,314

Inspection of Petroleum :—

The quantity of Canadian Petroleum and Naphtha inspected during the Fiscal Year was as follows :—

Petroleum	19,051,752
Naphtha	3,712,060
Total	22,763,812

Public Works :

The revenue accrued from this source was as follows :—

	1906-1907.	1907-1908.
Hydraulic and other rents	$ 2,547 00	$ 3,647 00
Minor public works	184 83	1,154 75

Weights and Measures and Electric Light :—

The usual special reports in relation to these services have been prepared, containing full statistical information.

The aggregate revenue accrued from these services was $169,573.52.
The cost of the three services being $150,323.99.

Prevention of Adulteration of Food and Agricultural Fertilizers :—

The usual supplementary report in relation to this service will be submitted, containing details of the work done and the report of the analysts.

Methylated Spirits :—

The quantity of methylated spirits manufactured during the nine months was 105,175.92 proof gallons, and the sales 102,235.98 proof gallons. A statement of details appears on pages 68, 69.

The price of this denatured alcohol is practically the actual cost of manufacture and is as follows:—

Grade No. 1, 70c. per gallon and when containing 1 per cent. of benzine 60c. per gallon.

Grade No. 2, 80c. per gallon and when coloured violet 65c. per gallon.

Appendix A shows the consumption of, and revenue derived annually from spirits, tobacco and other goods subject to Excise, and of similar goods subject to duties of Customs, per head of the population of the Dominion.

Appendix B contains, as usual, the details concerning illicit stills seized during the year.

Appendix C shows the amount of Excise Revenue collected at each out-office and under various headings, separately.

I have the honour to be, Sir,

Your obedient servant,

W. J. GERALD,
Deputy Minister.

Inland Revenue Department,
Ottawa, June 11, 1908.

APPENDIX A

TABLE showing the Annual Consumption per head of the undermentioned articles paying Excise and Customs Duties, and the Revenue per head derived annually.

YEARS.	DOMINION OF CANADA.									
	Quantity.					Duty.				
	Spirits.	Beer.	Wine.	Tobacco.	Petroleum.	Spirits.	Beer.	Wine.	Tobacco.	Petroleum.
	Galls.	Galls.	Galls.	Lbs.	Galls.	$	$	$	$	$
1869	1·124	2·290	·115	1·755	·575	·761	·092	·037	·193	·041
1870	1·434	2 163	·195	2·190	1·103	·962	·085	·049	·259	·061
1871	1·578	2·490	259	2·052	1·591	1·059	·095	·056	·336	·077
1872	1·723	2·774	·257	2 481	1·302	1·160	·108	·070	·422	·076
1873	1·682	3·188	·238	1·999	1·387	1·135	·120	066	·359	·084
1874	1·994	3·012	288	2 566	1·618	1·363	·119	·086	·442	·103
1875	1·394	3·091	·149	1·995	1·589	1·127	·114	·069	·428	·098
1876	1·204	2·451	177	2·316	1·360	1·182	·098	·075	·513	·105
1877	·975	2·322	·096	2 051	1·103	·949	·109	·057	·446	·084
1878	·960	2·169	·096	1·976		·927	·147	052	·439	
1879	1·131	2·209	·104	1·954		1·005	·12›	·057	·449	
1880	·715	2·248	·077	1·956		·772	·081	·955	·428	
1881	·922	2·293	·099	2·035		·990	·081	·073	443	
1882	1·009	2·747	·120	2·150		1·084	098	·092	·485	
1883	1·090	2·882	·135	2·280		1·186	·103	·097	·473	
1884	·998	2·024	·117	2·476		1 074	·104	·082	·365	
1885	1·126	2 639	·109	2·623		1·198	·111	·074	·393	
1886	·711	2·839	·110	2·052		1·007	·091	·074	·502	
1887	·746	3 084	·095	2·062		1·045	·100	·066	·514	
1888	·645	3·247	·094	2·093		·944	·110	·066	·509	
1889	·776	3·263	·097	1·153		1·107	·114	·068	·529	
1890	·883	3·360	·104	2·143		1·257	·121	·072	·539	
1891	·745	3·790	·111	2 292		1·094	·137	·080	·590	
1892	·701	3·516	·101	2 291		1·156	·211	·075	·680	
1893	·740	3·485	·094	2·314		1·235	·218	·070	·691	
1894	·742	3·722	·089	2·264		1·235	·205	·060	·683	
1895	·666	3·471	090	2·163		1·124	·161	·056	·645	
1896	·623	3·528	070	2·120		1·159	·164	·047	·639	
1897	·723	3 469	·084	2·243		1·341	·213	·041	·671	
1898	·536	3·808	·082	2·358		1·306	·126	·041	·615	
1899	·661	3·995	·086	2·174		1·367	·174	·045	·841	
1900	·701	4·364	·085	2·300		1 455	·185	·044	·853	
1901	·765	4·737	·100	2 401		1·593	·198	·048	·875	
1902	·796	5·102	·090	2·404		1·653	·214	·048	·915	
1903	·870	4·712	·096	2 548		1·812	·205	·051	·992	
1904	·952	4·918	·096	2·765		1·985	·225	·051	1·042	
1905	·869	4·972	·090	2·686		1·842	·207	·040	1·005	
1906	·861	5·255	·091	2·777		1·800	·228	·050	1·052	
*1907 (nine months)	·947	5·585	·092	2·953		1·972	·249	·053	1·276	
1908	·889	5·812	·096	2·898		1·858	·253	·054	1·129	
Average	·965	3·448	·119	2·257		1·257	147	·061	·616	

*Calculation on basis of 12 months.

W. J. GERALD,
Deputy Minister.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

APPENDIX B

Statement of Seizures of Illicit Manufactures for the year ended March 31, 1908.

Divisions.	No.	Date.	Names.	Residence.	Schedule Value.	Remarks.
					$ cts.	
Montreal	1147	Apl. 22	J. A. Labelle	Montreal	6 90	Fine $100 imposed and paid.
Quebec	584	May 23	U. Duval	St. Nicholas	10 00	" 50 " " "
"	585	Oct. 2	D. Carrière	St. Jean, Port Joli	3 00	No action taken.
"	586	Nov. 27	E. Cloutier	St. Roch	10 56	Fine $100 and one month in jail.
"	592	Mch. 6	Z. Audet	St. Nérée	2 00	No action taken.
"	593	Mch. 6	A. Lapointe	St. Nérée	2 00	" "
Sherbrooke	213	Oct. 15	M. Coté	Township of Weedon	10 00	To Justice Department for prosecution.
Pictou	115	May 11	M. Nolan	Glace Bay	50 00	No action taken.
"	116	June 21	D. Smith	Guysboro	10 00	" "
"	117	Feb. 19	Unknown	Low-Point	27 00	" "
Vancouver	37	May 30	Oikawa	Vancouver	106 00	Fine $500 imposed and paid.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

W. J. GERALD,
Deputy Minister.

APPENDIX C.

STATEMENT showing the Amount of Excise and other Revenues col'ected at each of the undermentioned Out-Offices, during the year ended March 31, 1908.

Divisions.	Out-Office.	Licenses.	Spirits.	Malt Liquor.	Malt.	Tobacco.	Cigars.	Manufactures. in Bond.	Other Receipts.	Electric Light Inspection Fees.	Totals.
		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Belleville	Deseronto										
	Picton	20 00	1,254 63								1,274 63
	Trenton	20 00	6,892 61								6,912 61
Cornwall	Delhi										
Brantford	Embro									5 00	5 00
	Ingersoll									25 00	25 00
	Norwich	50 00						1,792 79	600 00	10 00	2,452 79
	Paris									25 00	25 00
	Port Dover										
	Port Rowan										
	Simcoe		1,412 51			45 20	84 00				1,541 71
	Tilsonburg									25 00	25 00
	Waterford										
	Woodstock	295 00	4,962 15		1,684 35	1,271 70	3,658 95		921 53		12,793 68
Guelph	Berlin	370 00	74,336 52		20,235 00	9,802 95	7,552 65		1,763 93	25 00	114,086 65
	Drayton									5 00	5 00
	Elmira									10 00	10 00
	Fergus									25 00	25 00
	Galt	175 00				350 20	1,033 80		112 94	25 00	1,696 94
	Harriston									10 00	10 00
	Hespeler									10 00	10 00
	Mount Forest									10 00	10 00
	New Hamburg	50 00			3,706 50					10 00	3,766 50
	Preston	175 00			4,819 50	685 20	1,957 20		314 04	25 00	7,975 94
	St. Jacobs									5 00	5 00
	Waterloo	575 00	322,517 67		47,792 25	1,656 03	6,355 80		6,630 91	25 00	385,552 66
Hamilton	Dundas	200 00			854,901 35						855,101 35
Kingston	Napanee	20 00	6,699 94							20 00	6,739 94
London	Alvinston									10 00	10 00
	Aylmer	75 00				35 50	1,232 49			10 00	1,352 99
	Dutton								100 00	10 00	110 00
	Forest									10 00	10 00
	Glencoe									10 00	10 00
	Lucan									10 00	10 00

	Park Hill									10 00	10 00
	Petrolia	21 00	5,767 21							25 00	5,753 21
	Port Stanley									5 00	5 00
	Sarnia	166 00	31,532 29		1,350 00	102 80	566 64		38 37	25 00	33,781 10
	St. Thomas	200 00				3,114 96	10,917 00			25 00	14,256 96
	Strathroy	100 00			3,900 00				258 13	25 00	4,283 13
	Watford									5 00	5 00
	West Lorne									5 00	5 00
Owen Sound	Carlsruhe	50 00									50 00
	Collingwood	20 00				2,748 00			2 00	25 00	2,795 00
	Formosa	50 00			2,286 30						2,336 30
	Kincardine		363 02							10 00	373 02
	Meaford	40 00				4,269 51				10 00	4,319 51
	Newstadt	50 00			3,652 50						3,702 50
	Walkerton	50 00	157 29		1,917 00				1 00	30 00	2,155 29
Ottawa	Buckingham										
	Moose Factory	2 00				2,727 50					2,747 50
	Ville Marie	20 00	6,457 09								6,477 09
Perth	Arnprior	20 00	6,429 44							25 00	6,474 44
	Eganville	20 00	2,025 88			4,992 00				10 00	7,047 88
	North Bay	90 00	17,769 95	310 80	10,231 09	15,241 50			50 00	25 00	43,718 34
	New Liskeard	10 00	135 23								145 23
	Pembroke	225 00	5,510 54			8,598 45	826 20			25 00	15,185 19
	Renfrew	40 00	7,346 09							35 00	7,121 09
	Sturgeon Falls	30 00	27,107 54							25 00	27,162 54
	Sudbury	45 00	20,620 19		2,400 00				250 00	30 00	23,345 19
Peterborough	Campbellford	20 00			3,078 00					25 00	3,913 00
	Cobourg	20 00	6,847 19							25 00	6,892 19
	Lindsay	50 00	5,868 46							25 00	3,153 46
	Port Hope	270 00	3,179 62		8,510 55				10 00	25 00	11,995 17
Port Arthur	Fort William	150 00	28,426 61		1,383 00	199 60	512 49			25 00	30,696 70
	Kenora		29,634 62			6,846 12					36,480 74
	Rainy River		8,030 79								8,030 79
	Wabigoon		1,352 00								1,352 00
Prescott	Brockville	195 00	6,390 83		5,785 50	824 10	2,070 00		157 61	25 00	15,448 04
	Gananoque	20 00	2,976 84							10 00	3,005 84
St. Catharines	Beamsville									10 00	10 00
	Dunnville	95 00	1,102 47			257 00	998 70			10 00	2,463 17
	Fort Erie								50 00		50 00
	Grimsby									10 00	10 00
	Humbertstone	75 00				185 54	662 40				922 94
	Merriton									10 00	10 00
	Niagara									10 00	10 00
	Niagara Falls	300 00				278 20	906 00			25 00	1,509 20
	Port Colborne	125 00			7,128 00	216 90	648 00				8,117 90
	Port Dalhousie									10 00	10 00
	Queenston										
	Thorold									10 00	10 00
	Welland	85 00	610 04			126 00	399 90			10 00	1,230 94
Stratford	Goderich	20 00	735 09							25 00	780 09

APPENDIX C—*Continued.*

STATEMENT showing the Amount of Excise and other Revenues collected at each of the undermentioned Out-Offices, during the nine months ended March 31, 1908—*Continued.*

Divisions.	Out-Offices.	Licenses.	Spirits.	Malt Liquors.	Malt.	Tobacco.	Cigars.	Manufactures in Bond.	Other Receipts.	Electric Light Inspection Fees.	Totals.
		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Perth—*Con.*											
	Listowell	125 00			4,711 50	1,236 50	3,703 20			5 00	9,781 20
	Palmerston	220 00			204 60				57 75	10 00	492 35
	St. Marys									25 00	25 00
	Seaforth	50 00								10 00	60 00
Toronto	Barrie	337 50			5,127 48	84 40	177 00				5,726 38
	Hornby	100 00			3,651 15						3,751 15
	Orillia (included in Barrie)										
	Sault Ste. Marie	295 00	8,412 63		15,480 00	267 70	2,438 40				26,893 73
Windsor	Chatham	200 00	38,583 03			1,033 60	3,684 57			25 00	43,526 20
	Kingsville	75 00								10 00	85 00
	Leamington	275 00				600 30	1,508 88			10 00	2,394 18
Joliette	Berthierville	250 00	7,167 46					8,596 00	434 25		16,447 71
	L'Assomption					255 05					255 05
	L'Epiphanie	190 00		1,306 60		81 55	7,382 78				8,960 93
	St. Jacques	225 00				1,044 21					1,269 21
	St. Roch	50 00				463 75					513 75
Montreal	Chambly Basin	20 00	2,759 37								2,779 37
	St. Jerôme	40 00	24,421 51								24,461 51
	St. Laurent										
	St. Thérèse										
	Valleyfield	40 00	69,526 65				72 00				60,638 65
	Cap Santé										967 50
Quebec	Chicoutimi	20 00	12,006 07			967 50				25 00	12,051 07
	Fraserville	40 00	11,550 16							25 00	11,615 16
	Gaspé	40 00	1,986 39			1,497 50					3,523 89
	Magdalen Islands										
	Paspébiac										
	Rimouski	20 00	4,119 35							15 00	4,154 35
	Roberval	90 00	6,378 62			172 10				10 00	6,650 72
	St. Flavie	20 00	16,032 27								16,112 27
Sherbrooke	Granby	330 00				141,861 21	22,287 06				164,478 27
St. Hyacinthe	Black Lake	20 00	7,117 32								7,137 32

	Farnham	75 00		29 80		392 70					497 50
	Marieville	125 00		1,372 20		4,322 55					5,819 75
	Sorel	100 00	32,463 17							25 00	32,588 17
	St Aimé	65 00		5 98		115 95					186 93
	St. Césaire	25 00			86 50						111 50
	St. Johns	90 00	25,299 86				2,091 08	550 00	43 75		28,074 69
	Thetford Mines	20 00	9,367 87								9,387 87
	Victoriaville	20 00	15,574 61							25 00	15,619 61
Trois Rivières	Grand-Mère	40 00	3,408 65								3,448 65
	Shawinigan										
	St. Boniface	50 00			507 00						557 00
St. John	Bathhurst										
	Campobello										
	Chatham	20 00			8,275 00					30 00	8,325 00
	Claire										
	Fredericton	20 00			16,845 50			4 00		20 00	16,889 50
	Moncton										
	Newcastle	20 00			3,658 00					25 00	3,703 00
	Sackville	20 00			3,487 63					10 00	3,517 63
	Sussex	20 00			2,315 00			1 00		10 00	2,346 00
	St. Stephen	20 00	192 31		3,788 00					25 00	4,025 31
	Woodstock	20 00			3,189 50					20 00	3,229 50
Halifax	Amherst	20 00	2,075 89		580 50					25 00	2,701 39
	Truro	20 00			12,115 50					25 00	12,160 50
	Yarmouth	115 00			3,844 00	1,376 10	488 80			5 00	5,828 90
Pictou	Antigonish	40 00			1,553 00						1,593 00
	New Glasgow	20 00			11,716 25						11,736 25
	Sydney	115 00	10,470 01			408 00		119 20			11,112 21
	North Sydney	20 00			2,139 25						2,159 25
Charlottetown	Alberton										
	Cardigan										
	Georgetown										
	Montague									5 00	5 00
	Murray Harbour										
	Summerside									10 00	10 00
	Souris										
Winnipeg	Boissevain									10 00	10 00
	Brandon	385 00	53,217 86	9,224 22	4,312 50	4,710 15		1,658 58		25 00	73,533 31
	Carberry									10 00	10 00
	Carman									10 00	10 00
	Dauphin									25 00	25 00
	Morden	20 00	3,802 37							10 00	3,832 37
	Minnedosa									10 00	10 00
	Neepawa									25 00	25 00
	Portage la Prairie	115 00	29,151 28		3,451 50	1,224 30		438 30		25 00	34,405 38
	Selkirk	20 00	4,354 98							10 00	4,384 98
	Virden	20 00	7,021 07								7,041 07
	York Factory	20 00			657 75						677 75
Calgary	Daysland	20 00	1,244 43								1,264 43
	Edmonton	445 00	62,269 39	20,880 43	13,598 75	4,528 80	1,858 90			25 00	103,606 27

APPENDIX C—*Concluded.*

STATEMENT showing the amount of Excise and other Revenues collected at each of the undermentioned Out-Offices, during the year ended March 31, 1908—*Concluded.*

Divisions.	Out-Offices.	Licenses.	Spirits.	Malt Liquor.	Malt.	Tobacco.	Cigars.	Manufactures in Bond.	Other Receipts.	Electric Light Inspection Fees.	Totals.
		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Calgary—*Con.*	Fort Saskatchewan	20 00	1,750 36							10 00	1,780 36
	Lacombe	20 00	2,260 07							10 00	2,290 07
	Lethbridge	255 00	7,094 29		11,315 46	5,479 25	651 00	245 45		25 00	25,065 45
	Medicine Hat	20 00	4,391 79								4,411 79
	Pincher Creek	20 00	2,942 18								2,962 18
	Stettler	20 00	1,528 79								1,548 79
	Wetaskiwin	40 00	5,769 59								5,809 59
Moose Jaw	Estevan	20 00	5,047 38						2 88	10 00	5,080 26
	Indian Head	20 00	1,808 33						2 88	25 00	1,856 21
	Maple Creek	20 00	241 22								261 22
	North Battleford	20 00	6,835 27						2 64		6,857 91
	Prince Albert	95 00	10,060 95							25 00	10,180 95
	Regina	270 00	17,301 23		1,800 00	6,265 50	625 80	176 70		25 00	26,464 23
	Saskatoon	122 50	16,345 05		1,857 80		666 30	305 60	48	25 00	19,322 73
	Warman	20 00	4,756 00						3 60		4,779 60
	Wendorf	20 00	2,299 71						2 88		2,322 59
	Weyburn	10 00	746 02						1 33	25 00	782 35
Vancouver	Anondaga	50 00									50 00
	Ashcroft									5 00	5 00
	Atlin	50 00		78 00							128 00
	Cascade									5 00	5 00
	Cranbrook	90 00	9,562 82		217 50					10 00	9,880 32
	Fernie	145 00	15,461 45		9,982 75	357 88	873 00			25 00	26,845 08
	Golden	20 00	3,264 26								3,284 26
	Grand Forks	100 00			630 00					10 00	740 00
	Greenwood	70 00	2,847 19		1,050 00					10 00	3,977 19
	Hedley	50 00			176 63					5 00	231 63
	Kamloops	200 00			900 00	1,355 70	4,106 55		62 25	25 00	6,649 50
	Kaslo									10 00	10 00
	Kelowna										
	Ladner									10 00	10 00
	Merritt	25 00									25 00
	Michel	20 00	5,353 41							10 00	5,383 41
	Moyie	50 00			150 00						200 00

	Nelson	240 00	32,501 38		4,125 00	1,312 04	3,400 58			25 00	41,604 00
	New Westminster	220 00	1,043 06		5,134 88	2,983 10	8,977 50		255 50	25 00	18,639 04
	North Vancouver									10 00	10 00
	Phoenix	50 00			1,802 69						1,852 69
	Princeton	50 00									50 00
	Revelstoke	195 00	7,851 31		1,627 49	342 69	642 00			10 00	10,668 49
	Rossland	145 00	10,764 73		2,407 50	639 15	1,383 00			25 00	15,364 38
	Sandon	50 00			750 00					5 00	805 00
	Trail	50 00			2,010 00					10 00	2,070 00
	Trout Lake	50 00									50 00
	Vernon	80 00	7,226 25		695 78				149 25	10 00	8,161 28
	Ymir	50 00									50 00
Victoria	Nanaimo	370 00	4,790 54	354 70	15,106 73	1,246 71	3,160 80		13 00	25 00	25,067 48
		13,367 00	1,295,271 56	3,458 08	1,105,780 48	330,243 48	123,201 19	15,555 32	15,020 23	2,128 75	2,964,026 09

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

W. J. GERALD,
Deputy Minister.

FINANCIAL RETURNS, 1907-1908

DR. No. 1.—GENERAL REVENUES ACCOUNT FOR THE YEAR ENDED MARCH 31, 1908. CR.

Memo. of Refunds deducted below.	Amounts deposited to the credit of the Receiver General.	Balances due March 31, 1908.	Totals.	SERVICES.	Revenues of previous years not collected April 1, 1907.	Revenues accrued 1907-1908.	Totals.
$ cts.	$ cts.	$ cts.	$ cts.		$ cts	$ cts.	$ cts.
275,734 90	16,006,603 08	20,468 59	16,027,071 67	Excise and Seizures, per Statement No. 3	13,409 73	16,013,661 94	16,027,071 67
.....	3,739 00	27,375 17	31,114 17	Hydraulic and other rents, per Statement No. 5	27,467 17	3,647 00	31,114 17
100 00	958 75	12,673 99	13,632 74	Minor Public Works, per Statement No. 6	12,477 99	1,154 75	13,632 74
28 54	83,021 32	92 72	83,114 04	Weights and Measures, per Statements Nos. 19 (A) and 19(B)	92 72	83,021 32	83,114 04
.....	44,032 50	.....	44,032 50	Gas Inspection, per Statement No. 21	.....	44,032 50	44,032 50
15 00	42,456 45	63 25	42,519 70	Electric Light Inspection, per Statement No. 23	.....	42,519 70	42,519 70
11 75	10,153 05	.....	10,153 05	Law Stamps, per Statements Nos. 10 and 18	.....	10,153 05	10,153 05
.....	.....	45 04	45 04	Bill Stamps, per Statement No. 9	45 04	.....	45 04
.....	941 20	.....	941 20	Sundry Minor Revenues, per Statement No. 11	.....	941 20	941 20
.....	54,509 23	.....	54,509 23	Methylated Spirits, per Statement No. 26	.....	54,509 23	54,509 23
275,890 19	16,246,414 58	.....	16,307,133 34		.....	16,253,640 69	16,307,133 34
.....	275,890 19	.....	275,890 19	....LESS—Refunds, as per Statement No. 16	.....	275,890 19	275,890 19
.....	16,070,524 39	60,718 76	16,031,243 15	.....Totals	53,492 65	15,977,750 50	16,031,243 15

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

W. J. GERALD,
Deputy Minister.

DR. No. 2.—GENERAL EXPENDITURES ACCOUNT FOR

Balances due to Collectors, &c., April 1, 1907.	Expenditures Authorized by the Department.			Balances due by Collectors, &c., March 31, 1908.	Totals.	Services.
	Salaries.	Contingencies.	Seizures.			
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	
49 08	398,633 39	171,902 60	222 14	343 98	571,151 19	Excise and Seizures, per Statement No. 4
.....	.....	.....	2,409 97	.....	2,409 97	Excise Seizures, distributed per Statement No. 4, and Appendix B
.....	2,199 96	9,216 64	.....	.....	11,416 60	Preventive Service, per Statement No. 7
.....	13,225 29	13,392 98	.....	.....	26,618 27	Adulteration of Food, per Statement No. 8 and Appendix B
.....	.....	51 47	.....	.....	51 47	Sundry Minor Expenditures, per Statement No. 12
.....	54,667 68	6,909 57	.....	16 66	61,593 91	Departmental Expenditures, per Statement No. 17
.....	61,858 35	39,633 89	.....	193 26	101,685 50	Weights and Measures, per Statements Nos. 20 (A) and 20 (B)
.....	23,953 21	7,061 14	.....	212 88	31,227 23	Gas Inspection, per Statement No. 22
.....	6,014 60	11,802 80	.....	.....	17,817 40	Electric Light Inspection, per Statement No. 24
.....	4,699 88	50,196 28	.....	.....	54,896 16	Methylated Spirits, per Statement No. 25
49 08	565,252 36	310,167 37	2,632 11	766 78	878,867 70	.....Totals.....

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

THE YEAR ENDED MARCH 31, 1908. Cr.

Balances due by Collectors, &c., April 1, 1907.	Amounts disbursed by the Receiver-General, on requisition of the Department.	Deductions from Salaries for				Balances due to Collectors, &c., March 31, 1908.	Totals.
		Superannuation.	Insurance.	Retirement.	Guarantee.		
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
343 98	556,260 63	4,677 93	543 72	7,948 36	1,327 49	49 08	571,151 19
....	2,409 97	.....	.....	.....	.....	.....	2,409 97
... .	11,410 84	....	.....	.....	5 76	.....	11,416 60
.....	26,527 52	77 10	.....	.....	13 65	..... .	26,618 27
.....	51 47	.....	.....	.....	... .	....	51 47
16 66	60,170 13	455 31	158 34	793 47	.....	....	61,593 91
193 26	101,081 22	245 86	. .....	.....	165 16	.....	101,685 50
212 88	30,748 50	127 05	.....	5 00	133 80	.....	31,227 23
....	17,806 75	.....	.. ..	....	10 65	....	17,817 40
.....	54,796 12	.....	.....	100 04	.....	. ...	54,896 16
766 78	861,263 15	5,583 25	702 06	8,846 87	1,656 51	49 08	878,867 70

W. J. GERALD,
Deputy Minister.

DR. No. 3.—COLLECTION DIVISIONS

Balances due April 1, 1907.	Amount Accrued during the year, including License Fees.							
	Spirits.	Malt Liquor.	Malt.	Tobacco.	Cigars.	Acetic Acid.	Bonded manufactures.	Seizures.
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
.....	120,000 09	50 00	7,585 98	1,914 60	3,184 80	.....	.....	.....
112 61	44,775 59	150 00	13,272 06	10,207.72	33,919 41	.....	1,842 79	25 00
.....	6,430 08	.....	.....	14 50	..	.....	.....	.. ..
.....	416,282 39	400 00	104,687 60	17,111 95	19,352 40	.....	50 00	....
.....	297,021 80	100 00	70,719 95	460,823 43	90,569 54	.....	5,556 61	100 00
....	77,484 92	100 00	7,737 38	21,578 05	21,390 90	.....	2,877 21	.....
.....	75,549 49	300 00	77,111 63	67.083 74	188,479 80	.... . .	.....	100 00
.....	329,804 03	150 00	15,464 41	42,093 39	4,491 30	.....	1,080 52	....
.....	....	250 00	17,270 00	25,76o 66	3,605 70	.....	... ...	... .
.....	131,029 37	385 80	12,731 09	28,831 95	901 20	....	100 00	300 00
.....	47,548 80	150 00	20,326 54	311 00	1,207 50	.....	.. ..	.....
.....	91,883 24	25 00	5,433 90	11,919 47	637 49	.....	....	.....
....	157,738 20	100 00	18,978 97	844 10	2,145 00	.....	300 00	.....
.....	12,963 90	100 00	19,256 45	2,827 22	10,176 30	.. ..	.....	.....
.....	34,073 26	150 00	7,311 20	13,381 05	8,645 28	.....	.....	... .
.....	949,842 86	700 00	294,147 39	217,235 37	144,960 03	.....	24,652 69	.....
....	431,687 41	100 00	58,659 28	14,257 85	8,103 45	.....	200 00	....
522 89	.....	.....	.....	....	....	.....	....	.....
635 50	3,224,115 43	3,210 80	750,693 83	936,202 05	541,770 10	.....	36,659 82	525 00
....	40,387 29	....	.....	8,884 97	12,678 78	.....	.....	7 00
965 50	1,927,382 20	1,312 40	304,127 48	3,517,759 25	377,270 19	3,313 81	9,670 24	817 13
7 95	426,003 24	225 00	74,287 60	173,063 18	47,940 43	.....	4,172 39	436 55
.....	182,244 05	50 00	18,880 50	157,175 76	52,890 35	.....	300 00	.....
....	163,340 93	.....	2,325 00	3,139 33	13,855 00	.....	3,898 29	.....
.....	68,778 18	.....	....	1,449 51	3,185 15	. .....	.....	....
3,295 57	.....	. .....	.....	.....	.. ..	.....	.. ....	.. ..
4,269 02	2,808,135 89	1,587 40	399,620 58	3,861,472 00	507,819 90	3,313 81	18,040 92	1,260 68
.....	168,089 78	100 00	27,150 00	78,333 61	19,103 42	.....	3,310 54	360 00
1,442 62	.....	.....	.....	....	....	.....	... ...	.....
1,442,62	168,089 78	100 00	27,150 00	78,333 61	19,103 42	.....	3,310 54	360 00
.....	56,355 03	150 00	39,287 43	91,649 26	3,873 51	.....	.....	. .. .
....	10,470 01	. .....	....	21,360 30	483 00	.....	.....	... .
5,860 50	.....	.....	.....	.....	.....	.....	....	....
5,860 50	66,825 04	150 00	39,287 43	113,009 56	4,356 51	.....	.....	... .
.....	.....	... .	.....	34,672 67	....	.....	.. . .	200 00
.. ..	657,170 37	846 60	94,890 19	405,404 67	48,861 27	.....	6,863 86	....
.....	179,495 40	200 00	70,683 18	70,739 96	8,056 92	.... ..	.. ..	100 00
... .	69,745 74	504 60	5,607 80	6,747 80	1,479 60	.....	....	.....

SESSIONAL PAPER No. 12

1907-1908.

in Account with Revenues. CR.

Other Receipts.	Total Duties Accrued.	Total Debits.	DIVISIONS.	Deposited to the Credit of the Receiver General.	Balances due March 31, 1908.	Total Credits.
$ cts.	$ cts.	$ cts.		$ cts.	$ cts.	$ cts.
2,508 10	135,243 57	135,243 57	..Belleville	135,243 57		135,243 57
650 00	104,842 57	104,955 18	..Brantford	104,842 57	112 61	104,955 18
65 00	6,509 58	6,509 58	..Cornwall	6,509 58		6,509 58
6,449 40	564,333 74	564,333 74	..Guelph	564,333 74		564,333 74
3,642 10	928,533 43	928,533 43	..Hamilton	928,533 43		928,533 43
440 50	131,608 96	131,608 96	..Kingston	131,608 96		131,608 96
147 00	408,771 66	408,771 66	..London	408,771 66		408,771 66
566 90	393,650 55	393,650 55	..Ottawa	393,650 55		393,650 55
60 00	46,952 36	46,952 36	..Owen Sound	46,952 36		46,952 36
660 30	174,939 71	174,939 71	..Perth	174,939 71		174,939 71
100 00	69,643 84	69,643 84	..Peterborough	69,643 84		69,643 84
	109,899 10	109,899 10	..Port Arthur	109,899 10		109,899 10
1,169 98	181,276 25	181,276 25	..Prescott	181,276 25		181,276 25
115 00	45,438 87	45,438 87	..St. Catharines	45,438 87		45,438 87
80 00	63,640 79	63,640 79	..Stratford	63,640 79		63,640 79
9,943 20	1,641,481 54	1,641,481 54	..Toronto	1,641,481 54		1,641,481 54
17,425 16	530,433 15	530,433 15	..Windsor	530,433 15		530,433 15
		522 89	..Suspense Account		522 89	522 89
44,022 64	5,537,199 67	5,537,835 17	*Ontario*	5,537,199 67	635 50	5,537,835 17
8,636 00	70,594 04	70,594 04	..Joliette	70,594 04		70,594 04
3,181 13	6,144,833 83	6,145,799 33	..Montreal	6,144,698 36	1,100 97	6,145,799 33
1,740 25	727,868 64	727,876 59	..Quebec	727,863 69	12 90	727,876 59
310 00	411,850 66	411,850 66	..Sherbrooke	411,850 66		411,850 66
1,140 60	187,699 15	187,699 15	St. Hyacinthe	187,699 15		187,699 15
120 00	73,532 84	73,532 84	..Three Rivers	73,532 84		73,532 84
		3,295 57	..Suspense Account		3,295 57	3,295 57
15,127 98	7,616,379 16	7,620,648 18	*Quebec*	7,616,238 74	4,409 44	7,620,648 18
866 15	297,313 50	297,313 50	..St. John	297,313 50		297,313 50
		1,442 62	..Suspense Account		1,442 62	1,442 62
866 15	297,313 50	298,756 12	*New Brunswick*	297,313 50	1,442 62	298,756 12
300 00	191,615 23	191,615 23	..Halifax	191,615 23		191,615 23
120 00	32,433 31	32,433 31	..Pictou	32,433 31		32,433 31
		5,360 50	..Suspense Account		5,860 50	5,860 50
420 00	224,048 54	229,909 04	..*Nova Scotia*	224,048 54	5,860 50	229,909 04
	34,872 67	34,872 67	*Charlottetown*—P.E.I.	34,872 67		34,872 67
1,725 00	1,215,761 96	1,215,761 96	*Winnipeg*—Manitoba	1,215,761 96		1,215,761 96
525 00	329,800 46	329,800 46	*Calgary*—Alberta	322,882 02	6,918 44	329,800 46
375 00	84,460 54	84,460 54	*Moose Jaw*—Saskatchewan	84,460 54		84,460 54

EXCISE

DR. No. 3.—COLLECTION DIVISIONS

Balances due April 1, 1907.	Amount Accrued during the year, including License Fees.							
	Spirits.	Malt Liquor.	Malt.	Tobacco.	Cigars.	Acetic Acid.	Bonded manufactures.	Seizures.
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
1,202 09	226,440 07	2,639 10	62,339 98	104,323 41	38,161 35	.....	1,668 51	1,030 05
.. ..	130,342 56	2,181 80	32,634 10	45,070 34	14,571 05	.....	.....	.....
1,202 09	356,782 63	4,820 90	94,974 08	149,393 75	52,732 40	.....	1,668 51	1,030 05
.....	7,618 64	50 00	2,479 48	904 00	.....	.....	.....	.. ..
13,409 73	7,537,978 92	11,470 30	1,485,386 57	5,656,880 07	1,184,180 12	3,313 81	66,543 65	3,475 73
....	99,399 97	.....	112,625 33	62,785 27	91 68	.....	25 00	250 00
....	7,438,578 95	11,470 30	1,372,761 24	5,594,094 80	1,184,088 44	3,313 81	66,518 65	3,225 73

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

SESSIONAL PAPER No. 12

1907-1908.

in Account with Revenues. CR.

Other Receipts.	Total Duties Accrued.	Total Debits.	Divisions.	Deposited to the Credit of the Receiver General.	Balances due March 31, 1908.	Total Credits.
$ cts.	$ cts.	$ cts.		$ cts.	$ cts.	$ cts.
1,151 00	437,753 47	438,955 56	Vancouver	437,753 47	1,202 09	438,955 56
180 00	224,979 85	224,979 85	Victoria	224,979 85		224,979 85
1,331 00	662,733 32	663,935 41	*British Columbia*	662,733 32	1,202 09	663,935 41
40 00	11,092 12	11,092 12	*Yukon*	11,092 12		11,092 12
64,432 77	16,013,661 94	16,027,071 67	Totals	16,006,603 08	20,468 59	16,027,071 67
557 65	275,734 90		Less refunds as per statement No. 16			
63,875 12	15,737,927 04		Net Revenue			

W. J. GERALD,
Deputy Minister.

EXCISE

DR. No. 4.—COLLECTION DIVISIONS

Balances due by Collectors, April 1, 1907.	Amounts received from Department to meet Expenditures.	Deductions from Salaries for				Balances due to Collectors, March 31, 1908.	Totals.	Divisions.
		Superannuation.	Insurance.	Retirement.	Guarantee.			
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	
43 98	13,495 55	164 31	.....	171 71	31 44	.....	13,906 99	Belleville.
.....	7,084 74	76 98	.....	142 75	20 16	.....	7,324 63	Brantford.
.....	1,236 80	23 37	.....	.....	3 60	.....	1,263 77	Cornwall.
.....	19,608 79	323 55	.....	188 43	52 56	.....	20,173 33	Guelph.
.....	22,004 69	220 46	.....	514 52	73 88	.....	22,813 55	Hamilton.
.....	9,353 81	103 53	.....	77 82	28 08	.....	9,563 24	Kingston.
.....	22,099 42	256 87	71 76	335 01	61 92	.....	22,824 98	London.
.....	8,745 34	84 02	.....	210 52	27 81	.....	9,067 69	Ottawa.
.....	6,183 67	84 08	.....	41 22	15 84	.....	6,324 81	Owen Sound
.....	9,238 09	24 00	.....	257 92	36 72	.....	9,556 73	Perth.
.....	3,957 66	25 93	.....	126 69	12 92	.....	4,123 20	Peterborough.
.....	2,473 74	.....	.....	73 25	9 78	.....	2,556 77	Port Arthur.
.....	12,045 29	126 00	44 64	222 04	36 72	.....	12,474 69	Prescott.
.....	5,680 28	82 38	.....	105 55	18 72	.....	5,886 93	St. Catharines.
.....	6,947 14	55 96	47 28	207 35	23 04	.....	7,280 77	Stratford.
.....	45,158 74	625 32	41 76	767 72	126 36	.....	46,719 90	Toronto
.....	25,285 62	300 10	74 16	517 28	82 08	49 08	26,308 32	Windsor'
.....	8,719 99	50 00	.....	.....	27 00	.....	8,796 99	District Inspectors.
43 98	229,319 36	2,626 86	279 60	3,959 78	688 63	49 08	236,967 29	*Ontario.*
.....	9,431 31	30 24	.	365 36	30 24	.....	9,857 15	Joliette.
.....	53,228 73	583 80	.....	1,119 53	169 35	.....	55,101 41	Montreal.
.....	23,606 72	180 93	.....	389 88	56 52	.....	24,234 05	Quebec.
.....	7,377 03	64 04	....	181 77	24 48	.....	7,647 32	Sherbrooke..
.....	13,667 45	73 96	250 08	414 44	44 86	.....	14,450 79	St. Hyacinthe.
.....	3,330 39	48 00	.....	38 55	11 71	.....	3,428 65	Three Rivers.
.....	5,422 89	50 00	.....	125 00	18 00	.....	5,615 89	District Inspectors
.....	116,064 52	1,030 97	250 08	2,634 53	355 16	.....	120,335 26	*Quebec*
.....	10,478 60	162 95	... .	66 86	36 00	.....	10,744 41	St. John.
.....	2,987 20	50 00	....	.....	9 00	.....	3,046 20	District Inspector
.....	13,465 80	212 95	.....	66 86	45 00	.....	13,790 61	*New Brunswick*
.....	12,147 01	222 34	.....	22 18	36 48	.....	12,428 01	Halifax.
.....	2,966 78	23 37	.....	77 12	9 36	.....	3,076 63	Pictou.
.....	15,113 79	245 71	.....	99 30	45 84	.....	15,504 64	*Nova Scotia.*
100 00	2,480 08	19 96	.....	.....	6 48	.....	2,606 52	Charlottetown, P.E.I.
200 00	16,760 29	209 62	.....	267 34	45 11	.....	17,482 36	Winnipeg
.....	8,341 07	33 44	... .	136 59	16 98	.....	8,528 08	Calgary
.....	4,440 01	19 03	.....	94 74	10 62	.....	4,564 40	Moose Jaw
.....	4,633 95	50 00	.....	.....	9 00	.....	4,692 95	District Inspector
200 00	34,175 32	312 09	.....	498 67	81 71	.....	35,267 79	*Manitoba, Alberta and Saskatchewan.*

SESSIONAL PAPER No. 12

1907-1908.

in Account with Expenditures. CR.

Balances due to Collectors, April 1, 1907.	Expenditures Authorized by the Department.						Balances due by Collectors, March 31, 1908.	Totals.
	Salaries.	Seizures Expenditures.	Special Assistance	Rent.	Travelling Expenses.	Sundries.		
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
.....	11,660 26	.....	1,244 64	.....	756 45	201 66	43 98	13,906 99
.....	5,816 02	19 00	874 86	.....	390 48	224 27	.....	7,324 63
.....	1,169 94	.....	.....	.....	.....	93 83	.....	1,263 77
.....	19,078 56	.....	.....	150 00	454 45	490 32	.....	20,173 33
.....	22,078 62	7 30	291 66	.....	124 15	311 82	.....	22,813 55
.....	8,540 58	.....	.....	549 00	90 50	283 16	.....	9,563 24
.....	21,761 01	3 75	464 07	.....	229 75	366 40	.....	22,824 98
.....	8,419 87	1 50	512 40	.....	.....	132 92	.....	9,067 69
.....	5,799 80	.....	.....	125 00	258 45	141 56	.....	6,324 81
.....	8,519 55	.....	381 96	120 00	214 20	321 02	.....	9,556 73
.....	3,826 85	.....	.....	.....	140 25	156 10	.....	4,123 20
.....	2,046 98	.....	.....	.....	430 95	78 84	.....	2,556 77
.....	11,643 52	.....	532 87	.....	19 10	279 20	.....	12,474 69
.....	5,495 47	.....	.....	60 00	169 45	162 01	.....	5,886 93
.....	6,948 42	.....	59 00	.....	82 35	200 00	.....	7,280 77
.....	44,822 13	.....	176 25	.....	738 40	983 12	.....	46,719 90
49 08	24,467 76	.....	1,109 54	84 00	330 05	267 89	.....	26,308 32
.....	7,500 00	.....	.....	200 00	943 75	153 24	.....	8,796 99
49 08	219,595 34	31 55	5,638 25	1,288 00	5,372 73	4,948 36	43 98	236,967 29
.....	8,822 38	.....	627 51	.....	142 95	264 31	.....	9,857 15
.....	48,333 48	10 3	4,364 66	.....	1,105 75	1,287 17	.....	55,101 41
.....	17,183 25	53 39	5,275 47	.....	1,024 04	697 90	.....	24,234 05
.....	6,837 50	5 90	.....	.....	577 10	226 82	.....	7,647 32
.....	11,395 81	.....	2,249 76	144 00	238 05	423 17	.....	14,450 79
.....	3,173 29	.....	99 96	.....	49 75	105 65	.....	3,428 65
.....	5,000 00	.....	.....	.....	583 19	32 70	.....	5,615 89
.....	100,745 71	69 64	12,617 36	144 00	3,720 83	3,037 72	.....	120,335 26
.....	9,599 89	31 50	749 88	.....	88 20	274 94	.....	10,744 41
.....	2,500 00	.....	.....	.....	516 95	29 25	.....	3,046 20
.....	12,099 89	31 50	749 88	.....	605 15	304 19	.....	13,790 61
.....	11,711 48	.....	365 50	.....	157 87	193 16	.....	12,428 01
.....	2,712 44	74 25	.....	.....	116 60	173 34	.....	3,076 63
.....	14,423 92	74 25	365 50	.....	274 47	366 50	.....	15,504 64
.....	2,399 92	.....	.....	.....	15 95	90 65	100 00	2,606 52
.....	14,039 22	.....	2,267 48	60 00	446 70	468 96	200 00	17,482 36
.....	4,404 91	.....	1,713 90	390 00	1,570 70	448 57	.....	8,528 08
.....	2,534 51	.....	691 42	120 00	1,006 95	211 52	.....	4,564 40
.....	2,500 00	.....	.....	.....	2,046 90	146 05	.....	4,692 95
.....	23,478 64	.....	4,672 80	570 00	5,071 25	1,275 10	200 00	35,267 79

8-9 EDWARD VII., A. 1909

EXCISE

DR. No. 4.—COLLECTION DIVISIONS

Balances due by Collectors, April 1, 1907.	Amounts received from Department to meet Expenditures.	Deductions from Salaries for				Balances due to Collectors, March 31, 1908.	Totals.	Divisions.
		Superannuation.	Insurance.	Retirement.	Guarantee.			
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	
	19,708 63	60 72	14 04	614 37	67 83		20,465 59	Vancouver
	7,850 90	146 17		24 85	20 64		8,042 56	Victoria
	2,796 21	10 50			9 00		2,815 71	District Inspector.
	30,355 74	217 39	14 04	639 22	97 47		31,323 86	*British Columbia*
	942 80			50 00	7 20		1,000 00	Yukon
	433 04						433 04	Inspector of Bonded Factories
	620 55	6 00					626 55	Inspector of Breweries and Malt Houses
	467 98						467 98	Inspector of Distilleries
	363 00	6 00					369 00	Inspector of Tobacco Factories
	11,457 19						11,457 19	General Expenditures
	518 35						518 35	Legal Expenses
	69,577 78						69,577 78	Printing Tobacco Stamps
	8,895 58						8,895 58	Printing
	2,237 09						2,237 09	Stationery
	1,666 04						1,666 04	Lithographing and Engraving, &c.
	4,827 87						4,827 87	Commission to Customs Officers
	1 31						1 31	Commission on sale of stamps for CanadaTwist
	9,949 29						9,949 29	Duty-pay to Officers in charge of most important establishments
	3,328 15						3,328 15	Provisional Allowance
343 98	556,260 63	4,677 93	543 72	7,948 36	1,327 49	49 08	571,151 19	Grand Totals

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

SESSIONAL PAPER No. 12

1907-1908.

in Account with Expenditures. CR.

Balances due to Collectors, April 1, 1907.	Expenditures Authorized by the Department.						Balances due by Collectors, March 31, 1908.	Totals.
	Salaries.	Seizures Expenditures.	Special Assistance	Rent.	Travelling Expenses.	Sundries.		
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts	$ cts.	$ cts.	$ cts.
....	15,329 03	15 20	2,119 24	612 00	845 20	1,544 92	.....	20,465 59
.....	5,960 97	.....	1,277 13	.....	176 95	627 51	.....	8,042 56
.....	2,399 97	.....	... .	... .	410 59	5 15	.....	2,815 71
... .	23,689 97	15 20	3,396 37	612 00	1,432 74	2,177 58	.. ..	31,323 86
. .....	1,000 00	.. ..	....	....	. .....	.....	.....	1,000 00
....	300 00	....	.....	.....	133 04	.....	.....	433 04
..... .	300 00	... .	.. ....	.....	326 55	....	.....	626 55
.. ...	300 00	.....	.....	.....	166 12	1 86	.....	467 98
....	300 00	.....	....	.....	69 00	..... .	... .	369 00
.. ..	....	.. ..	.....	....	..... .	11,457 19	....	11,457 19
....	.....	....	.....	.....	. .....	518 35	.....	518 35
.....	....	....	.....	.....	.....	69,577 78	... .	69,577 78
.....	.....	.....	....	.....	.....	8,895 58	.....	8,895 58
.. .. ..	....	.....	.....	.....	.. ..	2,237 09	....	2,237 09
.....	.....	.....	.....	.....	.. ..	1,666 04	.....	1,666 04
.....	.....	.....	.....	... .	....	4,827 87	.....	4,827 87
....	... .	.....	.....	.....	....	1 31	.....	1 31
.....	.....	.....	.....	.....	.....	9,949 29	.....	9,949 29
.....	.....	....	.....	.. ..	.....	3,328 15	..... .	3,328 15
49 08	398,633 39	222 14	27,440 26	2,614 00	17,187 83	124,660 51	343 98	571,151 19

W. J. GERALD,
Deputy Minister.

HYDRAULIC AND OTHER RENTS FOR THE YEAR ENDED MARCH 31, 1908.

Dr. No. 5.—Summary Statement of Lessees Accounts. Cr.

Balances due April 1, 1907.	Accrued during the year ended March 31, 1908.	Totals.	——	Deposited to the credit of the Receiver General.	Balances due Mar. 31, 1908.	Totals.
$ cts.	$ cts.	$ cts.		$ cts.	$ cts.	$ cts.
1,427 84	3,360 00	4,787 84	....Chaudière Falls and Ottawa River.	3,357 00	1,430 84	4,787 84
225 00	26 00	251 00	....St. Lawrence River.	1 00	250 00	251 00
70 00	.....	70 00	....Rivière du Lièvre.	.....	70 00	70 00
696 00	261 00	957 00	... Sundry properties.	381 00	576 00	957 00
			Land Sales.			
15,573 50	.....	15,573 50	....Principal account.	.....	15,573 50	15,573 50
9,474 83	.....	9,474 83	....Interest.	.....	9,474 83	9,474 83
27,467 17	3,647 00	31,114 17	.....Totals.	3,739 00	27,375 17	31,114 17

Inland Revenue Department,
Ottawa, June 11, 1908.

W. J. GERALD,
Deputy Minister.

DR. No. 6.—MINOR PUBLIC WORKS, FOR THE YEAR ENDED MARCH 31, 1908. CR.

Balances due April 1, 1907.	Accrued during the year ended March 31, 1908.	Totals.		Deposited to the credit of the Receiver General.	Balances due March, 31, 1908.	Totals.
$ cts.	$ cts.	$ cts.		$ cts.	$ cts.	$ cts.
2,600 62		2,600 62	*Bridges.*		2,600 62	2,600 62
			... Dunville			
			Ferries.			
	15 00	15 00	....Buckingham and Cumberland	15 00		15 00
	50 00	50 00	...Buffalo and Point Abinot	50 00		50 00
45 83		45 83	....Clair Station and Kent		45 83	45 83
	10 00	10 00	....Courtright and St. Clair	10 00		10 00
	10 00	10 00	....Cross Point and Campbellton	10 00		10 00
20 00		20 00	....Edmundston and Maine		20 00	20 00
	50 00	50 00	....Fort Erie and Buffalo	50 00		50 00
1,736 79		1,736 79	... Hull (old lease)		1,736 79	1,736 79
	200 50	200 50	....Lapasse and Gower Point	200 50		200 50
	50 00	50 00	....Lapasse	25 00	25 00	50 00
	6 00	6 00	....Montebello and Alfred	6 00		6 00
	30 00	30 00	....Niagara and Youngstown	30 00		30 00
	1 00	1 00	....Ouellette Street, Detroit	1 00		1 00
1 00		1 00	... Pembroke and Allumette Island (old lease)		1 00	1 00
	130 00	130 00	....Pembroke and Allumette Island (new lease)	130 00		130 00
	200 00	200 00	.. Prescott and Ogdensburg	200 00		200 00
	70 00	70 00	....Quyon Ferry		70 00	70 00
	100 25	100 25	....Rainy River	100 25		100 25
	5 00	5 00	....Rockcliff and Gatineau	5 00		5 00
	100 00	100 00	....Sault St. Marie		100 00	100 00
30 00		30 00	....St. Leonard and Van Buren		30 00	30 00
			Sundries.			
8,000 00		8,000 00	.. Dundas and Waterloo Road		8,000 00	8,000 00
	2 00	2 00	....Government telegraph lines	1 00	1 00	2 00
	25 00	25 00	....Wiarton docks	25 00		25 00
43 75		43 75	....Part of building, Portland, N.B		43 75	43 75
	100 00	100 00	....Building, Ouellette Avenue, Windsor, Ont	100 00		100 00
12,477 99	1,154 75	13,632 74	.. ....Totals	958 75	12,673 99	13,632 74

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1907.

W. J. GERALD,
Deputy Minister.

PREVENTIVE SERVICE, 1907–1908.

DR. No. 7.—IN ACCOUNT WITH EXPENDITURES. CR.

Amount received from Department to meet Expenditures.	Guarantee.	Totals.	——	Expenditures Authorized by the Department				Totals.
				Salaries.	Special Assistance.	Travelling Expenses.	Sundries.	
$ cts.	$ cts.	$ cts.		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
498 66		498 66	Ottawa, Ont		483 26	15 40		498 66
300 00		300 00	Peterborough, Ont		300 00			300 00
2,151 88	5 76	2,157 64	Toronto, Ont	1,299 96	799 92	54 45	3 31	2,157 64
300 00		300 00	Joliette, Que		300 00			300 00
550 00		550 00	Montreal, Que		550 00			550 00
2,945 81		2,945 81	Quebec, Que		2,905 38	40 43		2,945 81
600 00		600 00	St. Hyacinthe, Que		600 00			600 00
33 50		33 50	Sherbrooke, Que			33 50		33 50
1,394 95		1,394 95	St. John, N. B.	900 00	300 00	189 20	5 75	1,394 95
237 44		237 44	Halifax, N. S.		199 92	35 27	2 25	237 44
1,011 56		1,011 56	Picton, N. S.		900 00	108 95	2 61	1,011 56
20 45		20 45	Calgary, Alta			20 45		20 45
729 96		729 96	Winnipeg, Man.		729 96			729 96
69 71		69 71	Charlottetown, P.E.I.			69 71		69 71
16 05		16 05	Vancouver, B.C.			16 05		16 05
550 87		550 87	General				550 87	550 87
11,410 84	5 76	11,416 60	Totals	2,199 96	8,068 44	583 41	564 79	11,416 60

W. J. GERALD,
Deputy Minister.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

FOOD INSPECTION, 1907–1908.

DR. — No. 8.—IN ACCOUNT WITH EXPENDITURES. — CR.

12—2

Amounts received from Department to meet Expenditures.	Guarantee.	Superannuation.	Totals.		Expenditures Authorized by the Department.					Totals.
					Salaries.	Special Assistance.	Rent.	Travelling Expenses.	Sundries.	
$ cts.	$ cts.	$ cts.	$ cts.		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
12,571 22		66 10	12,637 32	Chief Analyst	9,923 06	32 08	400 00	376 85	1,905 33	12,637 32
385 72	0 90		386 62	Kingston, Ont	198 52			82 20	105 90	386 62
535 14	1 77		536 91	Ottawa, Ont	266 00			175 05	95 86	536 91
125 97	0 27		126 24	London, Ont	49 98			45 00	31 26	126 24
889 42	0 90		890 32	Seaforth, Ont	500 00		120 00	162 90	107 42	890 32
343 76	0 90		344 66	Toronto, Ont	99 28			133 75	120 63	344 66
640 48	0 90	7 00	648 38	Montreal, Que	350 00			119 35	179 03	648 38
518 70	0 90		519 60	Quebec, Que	300 00			110 76	108 84	519 60
586 54	0 90		587 44	St. Hyacinthe, Que	200 00			260 27	127 17	587 44
566 91	0 90	4 00	571 81	St. John, N. B	200 00			242 10	129 71	571 81
579 44	0 90		580 34	Halifax, N. S	350 00			151 38	78 96	580 34
326 93	0 90		327 83	Charlottetown, P. E. I	200 00			50 10	77 73	327 83
598 73	0 90		599 63	Calgary, Alta	200 00			276 50	123 13	599 63
296 35	0 81		297 16	Winnipeg, Man	97 53			81 55	118 08	297 16
162 15	0 90		163 05	Victoria, B. C	100 00				63 05	163 05
339 97	0 90		340 87	Vancouver, B. C	199 92			24 80	116 15	340 87
551 73			551 73	Stationery					551 73	551 73
2,184 39			2,184 39	Printing					2,184 39	2,184 39
238 45			238 45	Lithographing					238 45	238 45
43 32			43 32	Technical translation					43 32	43 32
4,042 20			4,042 20	General					4,042 20	4,042 20
26,527 52	13 65	77 10	26,618 27	Totals	13,225 29	32 08	520 00	2,292 56	10,548 34	26,618 27

W. J. GERALD,
Deputy Minister.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

DR. No. 9.—Bill Stamp Distributors in account with the Inland Revenue Department. CR.

Balances April 1, 1907.		Totals.	——	Balances, March 31, 1908.		Totals.
Stamps on hand.	Cash on hand.			Stamps on hand.	Cash on hand.	
$ cts.	$ cts.	$ cts.		$ cts.	$ cts.	$ cts.
1,372 77	. . . . .	1,372 77	.....Post Office Department	1,372 77	.....	1,372 77
.....	11 54	11 54	.....Belleville, ex-Collector E. R. Benjamin.....	.....	11 54	11 54
.....	33 50	33 50	..... Three Rivers, ex-Collector B. Lasalle.....	.....	33 50	33 50
160 00	.....	160 00	.....McLeod, Colonel J. F., Fort Mcleod.....	160 00	.....	160 00
1,532 77	45 04	1,577 81	.....Totals	1,532 77	45 04	1,577 81

W. J. GERALD,
Deputy Minister.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

LAW STAMPS, 1907–1908.

No. 10.—Law Stamps in account with the Inland Revenue Department.

Dr.							Cr.
Stamps on hand April 1, 1907.	Stamps received from Department.	Totals.	——	Commission of 5 per cent. allowed by Department on stamps sold.	Deposited to the Credit of the Receiver General.	Stamps on hand March 31, 1908.	Totals.
$ cts.	$ cts.	$ cts.		$ cts.	$ cts.	$ cts.	$ cts.
.....	1,410 00	1,410 00	.....Cameron, R., Registrar, Supreme Court.....	45 00	1,330 45	34 55	1,410 00
.....	5,052 00	5,052 00	.....Audette, L. A., Registrar, Exchequer Court.....	252 60	4,799 40	.....	5,052 00
10,257 65	.....	10,257 65	..... Lithgow, J. T., Dawson. Yukon Territorial Court..	.....	3,750 95	6,506 70	10,257 65
2,067 25	.....	2,067 25	..... " " " Yukon Mining Court.....	.....	272 25	1,795 00	2,067 25
12,324 90	6,462 00	18,786 90	.....Totals.....	297 60	10,153 05	8,336 25	18,786 90

W. J. GERALD,
Deputy Minister.

Inland Revenue Department,
Ottawa, June 11, 1908.

12—2½

Dr. No. 11.—SUNDRY MINOR REVENUES, 1907-1908. Cr.

Accrued during the year ended March 31, 1908.	Totals.	——	Deposited to the Credit of the Receiver General.	Totals.
$ cts.	$ cts.		$ cts.	$ cts.
670 00	670 00	Fertilizer Inspection Fees and Licenses	670 00	670 00
148 25	148 25	Adulteration of Food Fees and Penalties	148 25	148 25
122 95	122 95	Casual Revenue	122 95	122 95
941 20	941 20	Totals	941 20	941 20

W. J. GERALD,
Deputy Minister.

Inland Revenue Department,
Ottawa, June 31, 1908.

DR. No. 12.—MINOR EXPENDITURES, 1907-1908. CR.

Amounts received from Department to meet Expenditures.	Totals.	——	Contingencies.	Totals.
$ cts.	$ cts.		$ cts.	$ cts.
51 47	51 47	Minor expenditures.....	51 47	51 47

W. J. GERALD,
Deputy Minister.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 31, 1908.

No. 13.—STATEMENT showing the quantities of the several articles subject to Excise ended March 31, 1907,

1906.

ARTICLES SUBJECT TO EXCISE DUTY.	QUANTITIES.			Duty.
	Ex-manufactory.	Ex-Warehouse.	Totals.	
	Gallons.	Gallons.	Gallons.	$ cts.
Spirits	3,765	3,545,785	3,549,550	6,721,008 08
	Imported.	*239,432	239,432	71,829 50
Totals	3,765	3,785,217	3,788,982	6,792,837 58
Malt liquor, the duty being paid on malt	33,250,637		33,250,637	3,578 20
	Lbs.	Lbs.	Lbs.	
Malt		85,699,102	85,699,102	1,286,093 13
Cigars—	No.	No.	No.	
Foreign	95,465,362	87,928,975	183,394,337	1,100,388 99
Canadian	539,580	628,020	1,167,600	3,502 80
Combination	4,426,000	4,839,405	9,265,405	27,796 22
Totals	100,430,942	93,396,400	193,827,342	1,131,688 01
Cigarettes—				
Foreign	259,712,200	2,671,750	262,383,950	794,794 35
Canadian				
Combination	3,834,500	3,116,489	6,950,989	10,426 48
Totals	263,546,700	5,788,239	269,334,939	805,220 83
	Lbs.	Lbs.	Lbs.	
Tobacco from Foreign leaf	1,096,486	8,144,033	9,240,519	2,310,130 15
" Canadian leaf	3,142,100	30,366	3,172,466	158,623 40
" Combination	1,157,181	748,561	1,905,742	95,287 28
Snuff	162,844		162,844	* 29,911 40
Canadian twist		36,340	36,340	1,817 00
Totals	5,558,611	8,959,300	14,517,911	3,400,990 06
Raw leaf tobacco, foreign		13,638,620	13,638,620	1,437,895 67
Total duties on tobacco and cigarettes				4,838,885 73
Vinegar				53,589 73
Acetic acid				1,556 09
Licenses, spirits				3,062 50
" malt liquor				6,425 00
" malt				6,350 00
" cigars				15,247 50
" tobacco				3,462 50
" bonded manufactures				2,525 00
" acetic acid				100 00
Grand total duty				14,145,400 97

* Spirits imported for use in the manufacture of crude fulminate, on which duty at a rate of 30 cents

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

Duty taken for consumption, during the years ended June 30, 1906, nine months and year ended March 31, 1908.

1907 (9 months).				1908.			
Quantities.			Duty.	Quantities.			Duty.
Ex-Manufactory.	Ex-Warehouse.	Totals.		Ex-Manufactory.	Ex-Warehouse.	Totals.	
Gallons.	Gallons.	Gallons.	$ cts.	Gallons.	Gallons.	Gallons.	$ cts.
4,475	3,033,439	3,037,914	5,758,107 02	8,655	3,918,657	3,927,312	7,436,974 30
Imported.	*157,325	157,325	47,197 46	.....	*325,015	325,015	97,504 62
4,475	3,190,764	3,195,239	5,805,304 48	8,655	4,243,672	4,252,327	7,534,478 92
26,505,831	... .	26,505,831	2,193 90	38,800,380	.. ..	38,800,380	5,120 30
Lbs.	Lbs.	Lbs.		Lbs.	Lbs.	Lbs.	
.....	69,176,871	69,176,871	1,038,006 59	.....	98,579,733	98,579,733	1,479,036 57
No.	No.	No.		No.	No.	No,	
86,933,261	59,138,355	146,071,616	876,715 17	103,561,245	85,874,755	189,436,000	1,136,635 85
950,370	228,500	1,178,870	3,536 61	1,278,200	550,100	1,828,300	5,484 90
4,007,449	2,995,325	7,002,774	21,008 32	5,130,605	3,738,350	8,868,955	26,606 87
91,891,080	62,362,180	154,253,260	901,260 10	109,970,050	90,163,205	200,133,255	1,168,727 62
256,602,560	1,461,500	258,064,060	780,673 93	374,671,654	2,569,890	377,241,544	1,141,704 48
22,700	... .	22,700	34 05	217,600	.....	217,600	326 40
6,243,800	2,047,150	8,290,950	12,436 43	5,182,100	2,168,100	7,350,200	11,025 30
262,869,060	3,508,650	266,377,710	793,144 41	380,071,354	4,737,990	384,809,344	1,153,056 18
Lbs.	Lbs.	Lbs.		Lbs.	Lbs.	Lbs-	
1,001,615	6,435,634	7,437,249	1,859,312 51	1,591,912	8,917,246	10,509,158	2,627,290 01
2,253,229	8,148	2,261,377	113,068 83	3,076,414	19,714	3,096,128	154,806 39
1,001,434	473,275	1,474,709	73,735 55	1,591,651	591,840	2,183,491	109,174 74
129,211	.. ..	129,211	23,915 35	169,385	....	169,385	31,423 10
.. .. ..	15,992	15,992	799 60	.....	13,447	13,447	672 35
4,385,489	6,933,049	11,318,538	2,863,976 25	6,429,362	9,542,247	15,971,609	4,076,422 77
.....	11,386,331	11,386,331	1,198,122 48	.. ..	14,962,407	14,962,407	1,576,330 30
. . ..	.. ..	....	4,062,098 73	....	....	....	5,652,753 07
....	.....	.....	40,059 47	.....	....		64,068 65
. .. .	....		1,907 60	.....	... .		3,213 81
.....	... .	.....	2,437 50	.....	.....	.....	3,500 00
....	.....	....	4,718 75	.. ..	.....	.....	6,350 00
....	....	....	4,875 00	....	.....	....	6,350 00
....	... ..	.....	11,497 52	.....	....	... .	15,452 50
.....	.. ..	..... .	3,030 13	.....	....	....	4,127 00
... .	... .	... ...	1,762 50	....	....	.....	2,475 00
..... .	.....	....	37 50	. .. .	... .	....	100 00
....	.....	....	11,879,189 17	... .	... .	....	15.945,753 44

per gallon was collected and afterwards refunded, on the exportation of the fulminate.

W. J. GERALD,
Deputy Minister.

No. 14.—Amounts deposited monthly to the credit of the Receiver General

—	Ontario.	Quebec.	New Brunswick.	Nova Scotia.
	$ cts.	$ cts.	$ cts.	$ cts.
April :—				
Excise	461,184 43	542,696 23	23,623 47	21,098 67
" Seizures		400 00		
Hydraulic and other Rents		1 00		
Minor Public Works		6 00		
Weights and Measures	831 62	675 60		60 39
" " Seizures		25 00		
Gas Inspection	319 50			
Electric Light Inspection	120 00	3 50		
Law Stamps (Supreme Court)	285 00			
" (Exchequer Court)	285 00			
Electric Light Registration Fees	2,545 00	420 00	240 00	285 00
Fertillizers' Fees	5 00	6 00		6 00
Methylated Spirits	2,473 29	1,611 21	31 29	83 24
Totals	468,048 84	545,844 54	23,894 76	21,533 30
May :—				
Excise	506,700 16	631,141 94	26,585 68	17,407 02
" Seizures		236 13	50 00	
Hydraulic and other Rents	5 00			
Minor Public Works	320 25		10 00	
Weights and Measures	3,324 80	2,193 00	61 20	211 21
Gas Inspection	1,558 50	1,489 75	42 00	41 25
Electric Light Inspection	1,270 00	457 75	106 50	42 00
Law Stamps (Supreme Court)	47 50			
" (Exchequer Court)	403 75			
" (Yukon Territorial Court)				
" " (Mining Court)				
Electric Light Registration Fees	435 00	420 00	15 00	65 00
Fertilizers' Fees	1 00	3 00		4 00
Adulteration of Food Fees	10 00	15 00		
Methylated Spirits	3,308 26	1,070 84	30 52	
Casual Revenue				
Totals	517,384 22	637,027 41	26,900 90	17,770 48
June :—				
Excise	438,592 24	612,439 41	24,647 33	17,375 32
" Seizures		47 50	110 00	
Hydraulic and other Rents	300 00			
Minor Public Works		5 00		
Weights and Measures	3,431 14	2,774 01	90 50	246 67
" " Seizures		25 00		
Gas Inspection	2,425 75	1,483 75	72 50	7 50
Electric Light Inspection	1,216 25	792 50	65 75	25 75
Law Stamps (Supreme Court)	95 00			
" (Exchequer Court)	304 00			
" (Yukon Territorial Court)				
" " (Mining Court)				
Electric Light Registration Fees	87 50	80 00		10 00
Fertilizers' Fees	6 00	3 00	1 00	
Adulteration of Food Fees	5 00			
" " Penalties		39 00		
Methylated Spirits	3,468 80	1,654 56	61 58	78 65
Totals	449,931 68	619,343 73	25,048 66	17,743 89
July :—				
Excise	432,066 83	643,487 76	27,510 35	15,950 09
" Seizures	50 00	251 10		
Hydraulic and other Rents	51 00			
Minor Public Works	50 00			
Weights and Measures	4,943 42	2,964 15	108 91	340 14
" " Seizures		5 00		

SESSIONAL PAPER No. 12

on account of Inland Revenues during the Year ended March 31, 1908.

Prince Edward Island.	Manitoba.	Alberta.	Saskatchewan.	British Columbia.	Yukon.	Totals.
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
2,328 95	113,204 10	20,545 53	360 00	37,198 64	68 69	1,222,308 71
				50 00		450 00
						1 00
						6 00
						1,567 61
						25 00
						319 50
						123 50
						285 00
						285 00
30 00	175 00	85 00	110 00	345 00		4,235 00
						17 00
				99 16		4,298 19
2,358 95	113,379 10	20,630 53	470 00	37,692 80	68 69	1,233,921 51
3,520 13	96,553 97	29,864 09	9,250 36	62,380 88	1,129 13	1,384,533 36
				73 85		359 98
						5 00
						330 25
15 95	478 15	165 10		112 95		6,562 36
	213 50			194 75		3,539 75
7 50	646 25			422 75		2,952 75
						47 50
						403 75
					335 00	335 00
					72 25	72 25
10 00	40 00	35 00				1,026 00
						8 00
						25 00
				160 04		4,569 66
		14 07				14 07
3,553 58	97,931 87	30,078 26	9,250 36	63,345 22	1,536 38	1,404,778 68
3,159 05	104,083 38	28,441 56	5,615 83	59,642 24	1,442 02	1,295,438 38
				500 00		657 50
				25 00		325 00
						5 00
36 58	587 40			212 55		7,378 85
						25 00
	271 75			308 25		4,569 50
17 00	196 25	24 45		284 25		2,622 20
						95 00
						304 00
					439 00	439 00
					56 25	56 25
		20 00	30 00	15 00	25 00	267 50
						10 00
						5 00
						39 00
	61 75					5,325 34
3,212 63	105,200 53	28,486 01	5,645 83	60,987 29	1,962 27	1,317,562 52
2,388 10	106,151 84	25,520 16	4,677 55	63,933 30	1,096 68	1,322,782 66
		100 00				401 10
				1 00		52 00
						50 00
58 60	636 70	263 40		118 05	7 00	9,440 37
						5 00

No. 14. - Amounts deposited monthly to the credit of the Receiver General on

—	Ontario.	Quebec.	New Brunswick.	Nova Scotia.
	$ cts.	$ cts.	$ cts.	$ cts.
July—*Con.*				
Gas Inspection	2,393 75	1,245 25	62 00	55 25
Electric Light Inspection	963 50	890 25	133 25	123 50
Law Stamps (Supreme Court)	95 00			
" (Exchequer Court)	46 55			
" (Yukon Territorial Court)				
" (" Mining Court)				
Electric Light Registration Fees		28 75		
Fertilizers' Fees	1 00			
Adulteration of Food Fees		5 00		
Methylated Spirits	2,929 35	1,551 05		90 56
Totals	443,590 40	650,428 31	27,814 51	16,559 54
August :—				
Excise	480,576 98	690,692 03	23,236 92	19,844 34
" Seizures				
Hydraulic and other Rents	1 00			
Weights and Measures	3,067 87	3,314 20	121 34	333 63
Gas Inspection	2,476 50	761 25	39 50	15 75
Electric Light Inspection	1,272 00	643 75	116 25	34 25
" Seizures				
Law Stamps (Exchequer Court)	11 40			
" (Yukon Territorial Court)				
Fertilizers' Fees				
Adulteration of Food Fees	5 00			
Methylated Spirits	3,371 20	1,063 22	30 21	67 51
Totals	490,781 95	696,474 45	23,544 22	20,295 48
September :—				
Excise	461,415 13	649,991 19	27,877 67	17,042 54
" Seizures	350 00	50 00	100 00	
Weights and Measures	3,517 28	2,363 80	130 89	282 58
Gas Inspection	2,254 00	700 00	44 00	24 00
Electric Light Inspection	754 50	556 25	101 00	87 00
Law Stamps (Supreme Court)	285 00			
" (Exchequer Court)	375 25			
" (Yukon Territorial Court)				
" (" Mining Court)				
Electric Light Registration Fees				25 00
Fertilizers' Fees	9 00			
Adulteration of Food Fees	5 00			
Methylated Spirits	3,001 42	1,608 16	36 70	
Casual Revenue	9 00			
Totals	471,975 58	655,269 40	28,290 26	17,461 12
October :—				
Excise	573,857 43	754,024 04	25,839 78	18,925 24
" Seizures		18 00		
Weights and Measures	5,378 99	2,296 22	270 36	187 55
" " Seizures		3 50		
Gas Inspection	2,396 75	695 25	75 00	50 00
Electric Light Inspection	1,457 50	893 75	133 00	39 00
Law Stamps (Supreme Court)	47 50			
" (Exchequer Court)	251 75			
" (Yukon Territorial Court)				
" (" Mining Court)				
Fertilizers' Fees	17 00			
Adulteration of Food Fees	5 00	10 00		
Methylated Spirits	3,876 81	1,957 36	29 90	77 86
Casual Revenue	36 70			
Totals	587,325 43	759,898 12	26,348 04	19,279 65

account of Inland Revenues during the Year ended March 31, 1908—*Continued.*

Prince Edward Island.	Manitoba.	Alberta.	Saskatchewan.	British Columbia.	Yukon.	Totals.
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
15 25	309 75	....	....	273 25	....	4,354 50
6 75	235 50	92 50	.....	344 75	.....	2,790 00
... .	.....	.....	.....	.....	.....	95 00
.....	.....	.....	.....	.....	.....	46 55
.....	.....	.. . .	....	. .....	477 75	477 75
... .	.....	.....	.....	.....	70 75	70 75
.....	....	....	....	10 00	10 00	48 75
. .....	....	.....	....	.....	.....	1 00
....	. ...	....	....	....	.....	5 00
....	.....	.. ..	. . ..	... .	.....	4,570 96
2,468 70	107,333 79	25,976 06	4,677 55	64,680 35	1,662 18	1,345,191 39
3,550 33	101,020 45	29,078 52	6,192 80	52,674 27	1,377 92	1,408,244 56
....	....	.. ..	....	14 10	....	14 10
.....	.....	.. ..	. .....	....	.....	1 00
123 13	624 85	414 60	.....	78 05	.....	8,077 67
.....	199 75	....	....	264 25	.....	3,757 00
....	270 75	34 25	....	432 25	.....	2,803 50
.....	.....	....	....	75 00	....	75 00
....	....	.....	....	....	.....	11 40
.. ..	.....	....	....	... .	511 70	511 70
.. ..	....	....	.....	4 00	....	4 00
... .	.....	.....	.....	.....	.....	5 00
....	... .	....	.. ..	283 72	....	4,815 86
3,673 46	102,115 80	29,527 37	6,192 80	53,825 64	1,889 62	1,428,320 79
2,900 85	99,755 78	23,652 78	9,293 08	53,342 06	424 36	1,345,695 44
....	.....	....	.....	55 60	.....	555 60
78 50	556 00	160 75	.....	71 70	.....	7,161 50
6 00	175 50	.....	....	262 75	....	3,466 25
4 50	336 00	....	.....	418 00	.....	2,257 25
.....	.....	....	.....	.....	.....	285 00
.....	.. ..	.....	....	.. ..	... .	375 25
.....	.....	.....	.....	.....	512 50	512 50
.....	.....	.....	.....	.....	21 00	21 00
.....	.....	.....	.....	.....	... .	25 00
.....	.....	.....	....	4 00	....	13 00
.....	.....	.....	....	... .	.....	5 00
... .	63 47	.....	.....	.....	.....	4,709 75
.....	.....	....	....	....	.....	9 00
2,989 85	100,886 75	23,813 53	9,293 08	54,154 11	957 86	1,365,091 54
3,490 78	102,017 60	26,578 03	6,672 40	58,124 91	273 84	1,569,804 05
200 00	.....	....	.....	.....	....	218 00
59 52	840 00	228 45	.....	212 05	.....	9,473 14
.....	.....	....	.....	.....	....	3 50
9 00	275 75	.....	.....	116 00	.....	3,617 75
8 75	351 50	32 50	.....	286 25	.....	3,202 25
....	....	. ...	.....	.....	.....	47 50
.....	.....	....	....	.....	....	251 75
....	.....	.....	.....	....	596 00	596 00
....	.....	.....	.....	....	13 50	13 50
.....	.....	.....	.....	....	....	17 00
10 00	.....	....	.. ..	....	. ...	25 00
.....	.....	....	.....	71 58	... .	6,013 51
.....	.....	....	....	....	.....	36 70
3,778 05	103,484 85	26,838 98	6,672 40	58,810 79	883 34	1,593,319 65

No. 14.—Amounts deposited monthly to the credit of the Receiver General on

	Ontario.	Quebec.	New Brunswick.	Nova Scotia.
	$ cts.	$ cts.	$ cts.	$ cts.
NOVEMBER:—				
Excise	521,413 28	658,581 13	25,514 09	20,011 60
" Seizures	25 00	63 70		
Minor Public Works	1 00			
Weights and Measures	4,084 12	2,066 20	297 85	354 94
Gas Inspection	2,329 75	750 25	28 50	32 50
Electric Light Inspection	1,744 75	759 50	74 50	140 00
Law Stamps (Supreme Court)	627 00			
" (Yukon Territorial Court)				
" (" Mining Court)				
Electric Light Registration Fees				10 00
" Export Power Licenses	150 00		25 00	
Fertilizers' Fees	1 00			
Adulteration of Food Fees	7 00			
Methylated Spirits	2,853 89	1,486 65	60 02	
Casual Revenue		58 18		
Totals	533,236 79	663,765 61	25,999 96	20,549 94
DECEMBER:—				
Excise	446,145 10	678,879 91	22,900 22	21,170 48
" Seizures				
Hydraulic and other Rents	351 00			
Minor Public Works	50 00			
Weights and Measures	3,273 56	946 07	371 65	321 19
Gas Inspection	2,535 75	843 25	49 00	11 50
Electric Light Inspection	1,473 00	750 50	106 00	138 25
" Seizures				
Law Stamps (Exchequer Court)	618 45			
" (Yukon Territorial Court)				
" (" Mining Court)				
Adulteration of Food Fees	5 00	5 00		
Methylated Spirits	1,864 25	835 38	27 96	78 05
Totals	456,310 11	682,260 11	23,454 83	21,719 47
JANUARY:—				
Excise	382,190 09	537,040 16	23,119 65	18,990 23
Hydraulic and other Rents	622 00	203 00		
Minor Public Works	475 50			
Weights and Measures	4,222 96	1,046 62	215 92	102 19
Gas Inspection	2,168 75	736 75	61 50	47 50
Electric Light Inspection	1,526 50	918 75	131 00	112 75
Law Stamps (Supreme Court)	210 00			
" (Exchequer Court)	522 50			
" (Yukon Territorial Court)				
Electric Light Registration Fees				
" Export Power Licenses	50 00			
Fertilizers' Fees	165 00	3 00		35 00
Methylated Spirits	1,850 81	1,591 58	31 06	31 65
Totals	394,004 11	541,539 86	23,559 13	19,319 32
FEBRUARY:—				
Excise	380,229 18	608,615 85	18,921 71	14,830 33
" Seizures		70 25		
Hydraulic and other Rents	1,257 00	2 00		16 00
Minor Public Works	25 00	15 00		
Weights and Measures	1,525 81	1,295 79	90 69	186 86
" " Seizures	15 50			
Gas Inspection	2,140 00	565 00	49 75	
Electric Light Inspection	1,386 00	571 25	123 75	40 00
Law Stamps (Supreme Court)	103 20			
" (Exchequer Court)	541 50			
" (Yukon Territorial Court)				

account of Inland Revenues during the year ended March 31, 1908—*Continued.*

Prince Edward Island.	Manitoba.	Alberta.	Saskatchewan.	British Columbia.	Yukon.	Totals.
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
3,450 10	125,098 07	30,757 47	10,257 51	55,547 67	1,705 36	1,452,336 28
						88 70
						1 00
102 74	877 45	200 60		79 70		8,063 60
2 50	201 75			262 75		3,608 00
10 00	499 25			615 25		3,843 25
						627 00
					140 00	140 00
					21 75	21 75
						10 00
						175 00
						1 00
						7 00
	62 50					4,463 06
				5 00		63 18
3,565 34	126,739 02	30,958 07	10,257 51	56,510 37	1,867 11	1,473,448 82
2,678 65	100,291 07	31,613 87	7,857 56	52,643 05	108 21	1,364,288 12
				53 50		53 50
						351 00
						50 00
54 91	790 65	230 00		87 65		6,075 68
	176 00			270 00		3,885 50
16 00	439 50	11 75		561 00		3,496 00
				50 00		50 00
						618 45
					127 00	127 00
					5 50	5 50
						10 00
	36 78			107 62		2,950 04
2,749 56	101,734 00	31,855 62	7,857 56	53,772 82	240 71	1,381,960 79
2,141 35	84,361 04	25,782 27	8,489 32	51,173 53	709 86	1,133,997 50
						825 00
						475 50
8 10	616 85	28 75		161 90	15 00	6,418 29
13 25	100 00			151 75		3,279 50
	507 25	33 75		325 50		3,555 50
						210 00
						522 50
					105 00	105 00
			25 00			25 00
						50 00
						203 00
	60 92					3,566 02
2,162 70	85,646 06	25,844 77	8,514 32	51,812 68	829 86	1,153,232 81
1,808 95	76,783 55	20,926 28	8,150 94	46,177 87	580 98	1,177,025 64
				101 50		171 75
				113 00		1,388 00
				1 00		41 00
11 25	732 50	147 85		99 45	55 00	4,145 20
						15 50
	139 50			229 75		3,124 00
19 00	298 56	71 00		507 50		3,017 00
						103 20
						541 50
					71 00	71 00

No. 14.—Amounts deposited monthly to the credit of the Receiver General on

——	Ontario.	Quebec.	New Brunswick.	Nova Scotia.
	$ cts.	$ cts.	$ cts.	$ cts.
February—*Con.*				
Fertilizers' Fees	237 00	7 00	10 00	18 00
Methylated Spirits	2,839 90	1,712 34		79 51
Totals	390,300 09	612,854 48	19,195 90	15,170 70
March :—				
Excise	452,303 82	607,388 41	27,176 63	21,402 68
" Seizures	100 00	124 00	100 00	
Hydraulic and other Rents	785 00	1 00		
Weight and Measures	4,169 42	2,740 34	276 57	343 87
Gas Inspection	4,385 50	1,308 50	110 50	91 00
" Seizures	20 00			
Electric Light Inspection	2,629 00	1,436 00	390 25	201 25
Law Stamps (Supreme Court)	162 25			
" (Exchequer Court)	812 25			
" (Yukon Territorial Court)				
" (" Mining Court)				
Fertilizers' Fees	32 00	30 00	28 00	6 00
Adulteration of Food Fees	17 25			5 00
Methylated Spirits	2,622 43	1,762 40	33 04	68 51
Totals	468,038 92	614,790 65	28,114 99	22,118 31
Grand Totals	5,670,934 12	7,679,496 67	302,266 16	229,520 30

Inland Revenue Department,
Ottawa, June 11, 1908.

account of Inland Revenues during the year ended March 31, 1908—*Concluded.*

Prince Edward Island.	Manitoba.	Alberta.	Saskatchewan.	British Columbia.	Yukon.	Totals.
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
.....	.....	.....	.....	.....	.....	272 00
.....	.....	.....	.....	108 71	.....	4,740 46
1,839 20	77,954 05	21,145 13	8,150 94	47,338 78	706 98	1,194,656 25
3,255 43	106,441 11	30,021 46	7,643 19	68,864 85	2,175 07	1,326,672 65
.....	.....	.....	.....	181 50	.....	505 50
.....	.....	.....	.....	5 00	.....	791 00
29 90	246 40	458 00	.....	308 55	10 00	8,583 05
38 25	254 50	.....	.....	303 00	.....	6,491 25
.....	.....	.....	.....	.....	.....	20 00
.....	311 25	27 25	.....	817 00	.....	5,812 00
.....	.....	.....	.....	.....	.....	162 25
.....	.....	.....	.....	.....	.....	812 25
.....	.....	.....	.....	.....	436 00	436 00
.....	.....	.....	.....	.....	11 25	11 25
.....	.....	.....	.....	28 00	.....	124 00
.....	.....	.....	.....	.....	.....	22 25
.....	.....	.....	.....	.....	.....	4,486 38
3,323 58	107,253 26	30,506 71	7,643 19	70,507 90	2,632 32	1,354,929 83
35,675 60	1,229,659 08	325,661 04	84,625 54	673,438 75	15,237 32	16,246,414 58

W. J. GERALD,
Deputy Minister.

RECAPITULATION of Statement No. 14 showing the total

——	Ontario.	Quebec.	New Brunswick.	Nova Scotia.
	$ cts.	$ cts.	$ cts.	$ cts.
Excise	5,536,674 67	7,614,978 06	296,953 50	324,048 54
" seizures	525 00	1,260 68	360 00	
Hydraulic and other rents	3,372 00	207 00		16 00
Minor public works	921 75	26 00	10 00	
Weights and measures	41,770 99	24,676 00	2,035 88	2,971 22
" " seizures	15 50	58 50		
Gas inspection	27,384 50	10,579 00	634 25	376 25
" seizures	20 00			
Electric Light Inspection	15,813 00	8,673 75	1,481 25	983 75
" seizures				
Law stamps (Supreme Court)	1,957 46			
" (Exchequer Court)	4,172 40			
" (Yukon Territorial Court)				
" (" Mining Court)				
Electric Light Registration Fees	3,067 50	948 75	255 00	395 00
" Export Power Licenses	200 00		25 00	
Fertilizers' Fees	474 00	52 00	39 00	69 00
Adulteration of Food Fees	59 25	35 00		5 00
" " Penalties		39 00		
Methylated Spirits	34,460 41	17,904 75	372 28	655 54
Casual Revenue	45 70	58 18		
	5,670,934 13	7,679,496 67	302,166 16	229,520 30

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

revenues for each service for the year ended March, 31, 1908.

Prince Edward Island.	Manitoba.	Alberta.	Saskatchewan.	British Columbia.	Yukon.	Totals.
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
34,672 67	1,215,761 96	322,782 02	84,460 54	661,703 27	11,092 12	16,003,127 35
200 00	.....	100 00	.....	1,030 05	.....	3,475 73
.....	.....	.....	.....	144 00	.....	3,739 00
.....	.....	.....	.....	1 00	.....	958 75
579 18	6,986 95	2,297 50	.....	1,542 60	87 00	82,947 32
.....	.....	.....	.....	.....	.....	74 00
84 25	2,317 75	.....	.....	2,636 50	.....	44,012 50
.....	.....	.....	.....	.....	.....	20 00
89 50	4,092 00	327 45	.....	5,014 50	.....	36,475 20
.....	.....	.....	.....	125 00	.....	125 00
.....	.....	.....	.....	.....	.....	1,957 45
.....	.....	.....	.....	.....	.....	4,172 40
.....	.....	.....	.....	.....	3,750 95	3,750 95
.....	.....	.....	.....	.....	272 25	272 25
40 00	215 00	140 00	165 00	370 00	35 00	5,631 25
.....	.....	.....	.....	.....	.....	225 00
.....	.....	.....	.....	36 00	.....	670 00
10 00	.....	.....	.....	.....	.....	109 25
.....	.....	.....	.....	.....	.....	39 00
.....	285 42	.....	.....	830 83	.....	54,509 23
.....	.....	14 07	.....	5 00	.....	122 95
35,675 60	1,229,659 08	325,661 04	84,625 54	673,438 75	15,237 32	16,246,414 58

W. J. GERALD,
Deputy Minister.

8-9 EDWARD VII., A. 1909

EXCISE

No. 15.—Comparative Monthly Statement

—		April.	May.	June.	July.	August.
		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Spirits	1906–1907	549,145 80	576,885 68	505,753 23	524,338 51	571,785 69
	1907–1908	676,169 09	645,792 96	552,842 87	563,113 97	604,962 29
Increase		127,023 29	68,907 28	47,089 64	38,775 46	33,176 60
Decrease						
Malt Liquor	1906–1907	805 30	283 80	423 70	4,487 90	755 20
	1907–1908	6,530 00	679 00	642 10	306 70	100 90
Increase		5,724 70	395 20	218 40		
Decrease					4,181 20	654 30
Malt	1906–1907	115,806 94	123,924 50	116,845 68	121,443 86	129,869 68
	1907–1908	149,873 85	142,322 58	122,276 83	142,321 40	136,251 72
Increase		34,066 91	18,398 08	5,431 15	20,877 54	6,382 04
Decrease						
Tobacco	1906–1907	408,378 12	450,178 46	403,606 80	457,963 14	482,617 79
	1907–1908	435,186 44	497,920 16	458,399 98	521,510 67	516,046 81
Increase		26,808 32	47,741 70	54,793 18	63,547 53	33,429 02
Decrease						
Cigars	1906–1907	92,557 10	104,439 33	105,908 61	113,743 48	110,091 81
	1907–1908	117,107 06	111,876 06	100,782 96	111,334 98	111,804 93
Increase		24,549 96	7,436 73			1,713 12
Decrease				5,125 65	2,413 50	
Acetic Acid	1906–1907				37 50	137 40
	1907–1908	50 00	61 88	337 90	60 14	140 55
Increase		50 00	61 88	337 90	22 64	3 15
Decrease						
Manufactures in bond	1906–1907	5,642 81	5,379 26	4,867 34	6,867 44	7,416 83
	1907–1908	8,116 96	6,673 44	5,972 46	5,981 10	7,696 46
Increase		2,474 15	1,294 18	1,105 12		279 63
Decrease					886 34	
Seizures	1906–1907	120 00	311 16	89 70	117 30	283 42
	1907–1908	450 00	1,010 48	257 00	151 10	14 10
Increase		330 00	699 32	167 30	33 80	
Decrease						269 32
Other Receipts	1906–1907	2,872 60	5,455 40	3,201 71	7,553 05	6,643 17
	1907–1908	11,773 95	7,406 88	2,367 73	4,177 35	3,096 20
Increase		8,901 35	1,951 48			
Decrease				833 98	3,375 70	3,546 97
Total Revenue	1906–1907	1,175,328 67	1,266,857 59	1,140,696 77	1,236,557 78	1,309,600 99
	1907–1908	1,405,257 35	1,413,743 44	1,243,879 83	1,348,957 41	1,380,113 96
Total Increase		229,928 68	146,885 85	103,183 06	112,400 23	70,512 97
" Decrease						
Net increase						

Inland Revenue Department,
Ottawa, June 11, 1908.

SESSIONAL PAPER No. 12

REVENUES.

for 1906–1907 and 1907–1908.

September.	October.	November.	December.	January.	February.	March.	Totals.
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
615,944 31	771,894 70	807,974 38	839,948 69	535,616 60	562,079 57	578,159 53	7,439,526 69
652,708 74	822,795 58	701,606 62	782,167 06	505,868 88	509,966 30	519,984 56	7,537,978 92
36,764 43	50,900 88	.....	.....	.....	.....	.....	402,637 58
.....	.....	106,367 76	57,781 63	29,747 72	52,113 27	58,174 97	304,185 35
109 40	48 90	439 80	474 00	160 00	78 15	359 30	8,425 45
456 20	225 50	229 80	737 40	390 50	434 10	738 10	11,470 30
346 80	176 60	.....	263 40	230 50	355 95	378 80	8,090 35
.....	.....	210 00	.....	.....	.....	.....	5,045 50
108,253 35	116,812 08	157,852 24	93,696 74	104,258 44	96,641 44	114,053 76	1,399,458 71
114,296 89	123,477 21	111,660 29	108,371 99	103,332 47	103,331 12	127,870 22	1,485,386 57
6,043 54	6,665 13	.....	14,675 25	.....	6,689 68	13,816 46	133,045 78
.....	.....	46,191 95	.....	925 97	.....	.....	47,117 92
437,336 85	508,298 39	516,158 45	377,346 91	418,427 41	432,158 48	434,821 44	5,327,292 24
452,217 06	521,815 70	502,675 99	393,475 48	434,462 50	479,579 99	443,589 29	5,656,880 07
14,880 21	13,517 31	.....	16,128 57	16,035 09	47,421 51	8,767 85	343,070 29
.....	.....	13,482 46	.....	.....	.....	.....	13,482 46
97,948 52	111,470 49	113,359 87	107,589 08	85,924 32	82,009 57	90,615 48	1,215,662 66
102,559 89	106,482 18	106,953 67	91,901 39	68,819 28	69,990 36	84,567 36	1,184,180 12
4,611 37	.....	.....	.....	.....	.....	.....	38,311 18
.....	4,988 31	6,406 20	15,687 69	17,105 04	12,019 21	6,048 12	69,793 72
481 07	539 65	426 08	.....	.....	190 91	131 89	1,944 50
1,097 88	664 79	672 20	42 37	.....	72 82	113 28	3,313 81
616 81	125 14	246 12	42 37	.....	.....	.....	1,506 01
.....	.....	.....	.....	.....	118 09	18 61	136 70
7,145 36	6,046 36	5,663 16	2,074 21	1,499 00	1,734 75	3,374 86	57,711 38
8,546 48	8,328 39	5,930 13	1,881 56	2,185 85	2,374 65	2,856 17	66,543 65
1,401 12	2,282 03	266 97	.....	686 85	639 90	.....	10,429 95
.....	.....	.....	192 65	.....	.....	518 69	1,597 68
123 78	290 00	63 92	150 79	80 00	318 83	168 53	2,117 43
558 60	215 00	88 70	53 50	68 75	280 50	328 00	3,475 73
434 82	.....	24 78	.....	.....	.....	159 47	1,849 49
.....	75 00	.....	97 29	11 25	38 33	.....	491 19
4,884 46	4,692 31	5,599 72	4,425 81	6,315 96	3,142 76	6,109 84	60,896 79
5,010 75	8,099 80	5,644 30	4,411 34	3,397 35	2,841 98	6,205 14	64,432 77
126 29	3,407 49	44 58	.....	.....	.....	95 30	14,526 49
.....	.....	.....	14 47	2,918 61	300 78	.....	10,990 51
1,272,227 10	1,520,092 88	1,607,537 62	1,425,706 23	1,152,281 73	1,178,354 46	1,227,794 63	15,513,035 85
1,337,452 49	1,592,104 15	1,435,461 70	1,383,042 09	1,118,525 58	1,168,871 82	1,186,252 12	16,013,661 94
65,225 39	72,011 27	.....	.....	.....	.....	.....	800,147 45
.....	.....	172,075 92	42,664 14	33,756 15	9,482 64	41,542 51	299,521 36
.....	.....	.....	.....	.....	.....	.....	500,626 09

W. J. GERALD,
Deputy Minister.

EXCISE.

Articles.	To whom paid.	Date.	Divisions.	Under what Authority Refunded.	Amounts.	Totals.
		1907.			$ cts.	$ cts.
Spirits	Parke, Davis & Co	April 23	Windsor	Refunded under Revised Statutes, cap. 34, sec. 238	199 85	
	" "	May 10	"	" " 34 " 238	1,110 19	
	" "	" 16	"	" " 34 " 238	232 98	
	Heney, J. J	" 16	Prescott	" " 34 " 238	17,014 23	
	Parke, Davis & Co	" 20	Windsor	" " 34 " 238	336 79	
	" "	" 29	"	" " 34 " 238	833 03	
	Hamilton, J. S. & Co	" 30	Brantford	" " 34 " 178	89 72	
	Heney, J. J	" 31	Prescott	" " 34 " 238	13,307 71	
	Howard, G. M	June 4	Sherbrooke	" " 34 " 238	6,516 88	
	Parke, Davis & Co	" 8	Windsor	" " 34 " 238	24 68	
	" "	" 11	"	" " 34 " 238	672 97	
	" "	" 26	"	" " 34 " 238	103 64	
	" "	July 9	"	" " 34 " 238	553 18	
	" "	" 15	"	" " 34 " 238	515 57	
	" "	" 25	"	" " 34 " 238	249 87	
	" "	Aug. 9	"	" " 34 " 238	1,147 86	
	" "	" 15	"	" " 34 " 238	178 42	
	" "	" 23	"	" " 34 " 238	245 57	
	Howard, G. M	Sept. 5	Sherbrooke	" " 34 " 238	954 43	
	Parke, Davis & Co	" 5	Windsor	" " 34 " 238	303 32	
	" "	" 9	"	" " 34 " 238	80 79	
	" "	" 11	"	" " 34 " 238	326 94	
	" "	" 19	"	" " 34 " 238	263 64	
	Howard, G. M	Oct. 2	Sherbrooke	" " 34 " 238	1,978 45	
	Parke, Davis & Co	" 9	Windsor	" " 34 " 238	742 23	
	Heney, J. J	" 16	Prescott	" " 34 " 238	17,440 68	
	Parke, Davis & Co	" 18	Windsor	" " 34 " 238	464 01	
	" "	" 19	"	" " 34 " 238	147 83	
	Hamilton, J. S. & Co	" 24	Brantford	" " 34 " 238	99 65	
	Parke, Davis & Co	" 29	Windsor	" " 34 " 238	368 87	
	The Eastern Township Bank for G. M. Howard	" 30	Sherbrooke	" " 34 " 238	8,111 84	
	Heney, J. J	Nov. 4	Prescott	" " 34 " 238	17,064 68	
	Parke, Davis & Co	" 7	Windsor	" " 34 " 238	444 85	
	" "	" 21	"	" " 34 " 238	339 87	
	" "	" 28	"	" " 34 " 238	91 74	

	"	"		Dec.	5..	"		"	"	34	"	238	821 10
	"	"		"	17..	"		"	"	34	"	238	654 70
	"	"		"	28..	"		"	"	34	"	233	729 37
				1908									
	"	"		Jan.	10..	"		"	"	34	"	238	673 46
	"	"		"	20..	"		"	"	34	"	238	136 43
	Hamilton, J. S. & Co			"	22..	Brantford		"	"	34	"	238	107 24
	Parke, Davis & Co			"	29..	Windsor		"	"	34	"	238	666 61
	"	"		Feb.	10..	"		"	"	34	"	238	631 09
	"	"		"	27..	"		"	"	34	"	238	418 73
	"	"		Mar.	9..	"		"	"	34	"	238	272 22
	"	"		"	13..	"		"	"	34	"	238	416 38
	"	"		"	18..	"		"	"	34	"	238	79 42
	"	"		"	25..	"		"	"	34	"	238	338 16
	"	"		"	31..	"		"	"	34	"	238	449 92
	"	"		April	15..	"		"	"	34	"	238	448 18
													99,399 97
				1907									
Malt	Copland Brewing Co., Ltd.			May	11..	Toronto		"	"	29	"	78	1,026 30
	Carling, T. H.			"	11..	London		"	"	34	"	178	14 55
	"			"	21..	"		"	"	29	"	78	1,454 90
	Capital Brewing Co., Ltd., The			"	21..	Ottawa		"	"	29	"	78	479 43
	Calcutt, Henry			"	21..	Peterborough		"	"	29	"	78	285 05
	Elliott, Alex			"	21..	"		"	"	29	"	78	308 00
	Meldrum, W. H			"	21..	"		"	"	29	"	78	113 40
	McCarthy, T. C.			"	21..	Prescott		"	"	29	"	78	300 35
	Reinhardt, L			"	21..	Toronto		"	"	29	"	78	1,193 25
	Copland Brewing Co., Ltd			"	21..	"		"	"	29	"	78	1,486 55
	Cosgrove Brew'g. Co., Ltd., The			"	21..	"		"	"	29	"	78	970 35
	Toronto Brewing and Malting Co			"	21..	"		"	"	29	"	78	903 75
	Dominion Brewery Co., Ltd.. The			"	21..	"		"	"	29	"	78	1,041 45
	Davies, T. H			"	21..	"		"	"	29	"	78	40 29
	Gooderham & Worts, Ltd			"	21..	"		"	"	29	"	78	1,054 15
	O'Keefe, Brewing Co., Ltd., The			"	21..	"		"	"	29	"	78	2,210 98
	Anderton & Co			"	21..	"		"	"	29	"	78	103 05
	Barrie Brewing Co., Ltd., The			"	21..	"		"	"	29	"	78	55 46
	Kemp, D. C			"	21..	"		"	"	29	"	78	129 08
	Wright, A. J			"	21..	"		"	"	29	"	78	33 07
	Rocot, Casimir			"	21..	"		"	"	29	"	78	460 50
	Irion, A. L			"	21..	Windsor		"	"	29	"	78	288 75
	Hiram Walker & Sons, Ltd.			"	21..	"		"	"	29	"	78	2,029 20
	Molson, John T			"	21..	Montreal		"	"	29	"	78	2,254 50
	Reinhardt, C. S			"	21..	Toronto		"	"	29	"	78	176 77
	Dawes, A. J			"	21..	Montreal		"	"	29	"	78	2,632 12

Excise—*Continued.*

Articles.	To whom paid.	Date.	Divisions.	Under what Authority Refunded.	Amounts.	Totals.
		1907			$ cts.	$ cts.
Malt—*Con.*	Canada Malting Co., Ltd., The	May 21..	Montreal	Refunded under Revised Statutes cap. 29, sec. 78	3,669 57	
	Dow & Co.	" 21..	"	" " 29 " 78	1,957 37	
	Boswell & Bro., Ltd	" 21..	"	" " 29 " 78	1,156 55	
	Robitaille, Lorenzo	" 21..	Quebec	" " 29 " 78	91 53	
	Amyot & Gauvin	" 21..	"	" " 29 " 78	390 00	
	Amyot, Geo. E. Brewery Co., Ltd	" 21..	"	" " 29 " 78	261 00	
	Beauport Brewing Co., Ltd.	" 21..	"	" " 29 " 78	540 00	
	Tellier, J. A.	" 21..	"	" " 29 " 78	97 50	
	Silver Spring Brewery Ltd.	" 21..	St. Hyacinthe	" " 29 " 78	647 78	
	Jones. Simeon, Ltd	" 21..	Sherbrooke	" " 29 " 78	270 00	
	Ready, James	" 21..	St. John	" " 29 " 78	600 00	
	Wickwire, W. N.	" 21..	"	" " 29 " 78	1,118 10	
	Highland Spring Brewery,	" 21..	Halifax	" " 29 " 78	147 00	
	Halifax Breweries, Ltd.	" 21..	"	" " 29 " 78	424 79	
	Drewry, E. L.	" 21..	"	" " 29 " 78	831 07	
	Shea, P	" 21	Winnipeg	" " 29 " 78	350 52	
	Manitoba Brewing & Malting Co., Ltd., The	" 21..	"	" " 29 " 78	106 90	
	Canada Malting Co., Ltd., The	" 21..	"	" " 29 " 78	1,888 41	
	Robinson, Isaac A	" 21..	"	" " 29 " 78	64 50	
	Brandon Brewing Co	" 21..	"	" " 29 " 78	66 75	
	Golden Lion Brewing Co.	" 21..	"	" " 29 " 78	90 00	
	Cross, A. E.	" 21..	"	" " 29 " 78	1,144 02	
	Edmonton Brewing and Malting Co., Ltd., The	" 21..	Calgary	" " 29 " 78	380 03	
	Letnbridge Brewing and Malting Co., Ltd., The	" 21..	"	" " 29 " 78	279 83	
	Vancouver Breweries, Ltd.	" 22..	Vancouver	" " 29 " 78	525 00	
	Phœnix Brewing Co	" 22..	"	" " 29 " 78	60 00	
	Nelson Nels	" 22..	"	" " 29 " 78	144 00	
	British Columbia Distillery Co., Ltd	" 22.	"	" " 29 " 78	40 50	
	Hartinger, Frank	" 22..	"	" " 29 " 78	56 25	
	Kerrigan, James	" 22..	"	" " 29 " 78	3 00	

Fort Steel Brewing Co.	"	22..	"	"	"	29	"	78	72 36
Fluhrer, John	"	22..	"	"	"	29	"	78	57 00
Imperial Brewing Co	"	22..	"	"	"	29	"	78	22 50
Enterprise Brewing Co.	"	22..	"	"	"	29	"	78	50 11
Henderson, Hugh	"	22..	"	"	"	29	"	78	73 80
Nelson Brewing Co., Ltd	"	22..	"	"	"	29	"	78	147 00
Elkhorn Brewing Co.	"	22..	"	"	"	29	"	78	30 00
New York Brewing Co	"	22..	"	"	"	29	"	78	27 75
Victoria Phœnix Brewing Co., Ltd	"	22..	Victoria	"	"	29	"	78	390 00
Union Brewing Co., Ltd., The	"	22..	Vancouver	"	"	29	"	78	383 11
Walkerville Brewing Co., Ltd	"	30..	Windsor	"	"	34	"	238	103 47
Union Brewing Co., Ltd., The	June	8..	Vancouver	"	"	34	"	178	60 00
Strathcona Brewing & Malting Co., Ltd.	"	8..	Calgary	"	"	29	"	78	219 98
Lyone Bros	"	11..	Winnipeg	"	"	29	"	78	2 77
Victoria Phœnix Brewing Co., Ltd	"	17..	Victoria	"	"	34	"	238	123 00
Wickwire, W. N	"	18..	Halifax	"	"	34	"	178	3 65
Halifax Breweries, Ltd	"	18..	"	"	"	34	"	178	30 68
New Ontario Brewing Co., Ltd	July	5..	Perth	"	"	34	"	238	55 40
Vancouver Breweries, Ltd.	"	18..	Vancouver	"	"	34	"	238	94 50
Victoria Phœnix Brewing Co., Ltd	"	18..	Victoria	"	"	34	"	238	61 50
New Ontario Brewing Co., Ltd.	"	26..	Perth	"	"	29	"	78	661 06
Northern Brewing Co	Aug.	7..	Vancouver	"	"	34	"	238	15 43
Amyot, G. E., Brewery Co., Ltd	Sept.	10..	Quebec	"	"	34	"	238	2,138 21
Amyot, G. E. Brewery Co., Ltd	"	10..	"	"	"	34	"	238	528 92
Sleeman Brewing & Malting Co., Ltd., The	"	11..	Guelph	"	"	34	"	238	316 38
Sleeman Brewing & Malting Co, Ltd., The	"	11..	"	"	"	29	"	78	38 25
Lyone Bros	"	28..	Winnipeg	"	"	34	"	238	68 52
Elkhorn Brewing Co.	"	28..	Vancouver	"	"	34	"	238	474 27
Moose Jaw Brewing & Malting Co., Ltd.	Oct.	9..	Moose Jaw	"	"	34	"	238	30 75
Connell, J. F.	"	10..	Peterborough	"	"	29	"	78	102 48
Carling, T. H.	"	17..	London	"	"	34	"	238	24 12
Lyone, Bros.	"	24..	Winnipeg	"	"	29	"	78	64 13
Proteau & Carignan	"	24..	Quebec	"	"	29	"	78	390 00
Vancouver Breweries, Ltd.	"	26..	Vancouver	"	"	34	"	238	99 00
Wilson, Lytle Badgerow Co., The	"	29..	Toronto	"	"	34	"	178	335 21

EXCISE—*Continued.*

Articles.	To whom paid.	Date.	Divisions.	Under what Authority Refunded.	Amounts.	Totals.
		1907.			$ cts.	$ cts.
Malt—*Con.*	Wilson, Lytle Badgerow Co., The	Oct. 29	Toronto	Refunded under Revised Statutes, cap. 34, sec. 178	565 64	
	Lyone Bros.	Nov. 6	Winnipeg	" " 29 " 78	19 57	
	Amyot, G. E., Brewing Co., Ltd.	" 6	Quebec	" " 29 " 78	184 22	
	Amyot, G. E., Brewing Co., Ltd.	" 6	"	" " 29 " 78	21 68	
	Moose Jaw Brewing & Malting Co., Ltd.	" 15	Moose Jaw	" " 34 " 238	29 55	
		1008				
	Schwan, David	Jan. 4	Owen Sound	" " 29 " 78	73 91	
	Amyot, G. E., Brewing Co., Ltd.	" 4	Quebec	" " 29 " 78	90 16	
	Moose Jaw Brewery & Malting Co., Ltd.	" 10	Moose Jaw	" " 29 " 78	30 60	
	Amyot, G. E., Brewing Co., Ltd.	" 22	Quebec	" " 29 " 78	85 11	
	Vancouver Breweries, Ltd.	Feb. 11	Vancouver	" " 34 " 238	66 00	
	Labatt, John	" 18	London	" " 34 " 178	13 35	
	Wilson, Little, Badgerow Co., The	" 18	Toronto	" " 34 " 178	105 07	
	Vancouver Breweries, Ltd.	Mar. 17	Vancouver	" " 34 " 238	69 00	
	Carling, T. H.	" 30	London	" " 34 " 238	17 60	
	Mueller, J.	April 7	Winnipeg	" " 34 " 238	191 15	
	Vancouver Breweries, Ltd.	" 13	Vancouver	" " 34 " 238	103 50	
	Roy, Jas. A.	" 25	Belleville	" " 29 " 78	166 08	
	Corby, H., Distillery Co., Ltd.	" 25	"	" " 29 " 78	210 60	
	Westbrook & Hacker	" 25	Brantford	" " 29 " 78	142 57	
	Otterbein, C	" 25	"	" " 29 " 78	84 22	
	Bixel, A	" 25	"	" " 29 " 78	425 56	
	Sleeman Brewing & Malting Co., Ltd., The	" 25	Guelph	" " 29 " 78	702 82	
	Andrich, E. C.	" 25	"	" " 29 " 78	197 10	
	Holliday, W. R.	" 25	"	" " 29 " 78	381 17	
	Bernhardt, V. P.	" 25	"	" " 29 " 78	240 98	
	Huether, C. N.	" 25	"	" " 29 " 78	1,000 35	

Rau, Mary	"	25..	"	"	"	29	"	78.....	185	32
Seagram, J. E	"	25..	"	"	"	29	"	78.....	540	00
Sleeman, Geo. A	"	25..	"	"	"	29	"	78.....	95	63
Grant's Spring Brewing Co., Ltd	"	25..	Hamilton	"	"	29	"	78.....	773	43
Canada Malting Co., Ltd., The	"	25..	"	"	"	29	"	78.. ...	2,745	07
Fisher, John	"	25..	Kingston	"	"	29	"	78.....	226	04
Stevenson, Robt	"	25..	"	"	"	29	"	78.....	158	33
Carling, T. H	"	25..	London	"	"	29	"	78	1,860	11
Labatt, John	"	25..	"	"	"	29	"	78	1,575	46
O'Dwyer, Patrick	"	25..	"	"	"	29	"	78.....	195	00
Hamilton, Joseph	"	25..	"	"	"	29	"	78.....	135	00
Union Brewing Co., Ltd., The	"	25..	"	"	"	29	"	78.....	67	50
Bauer, A	"	25..	Guelph	"	"	29	"	78.....	1,849	61
Capital Brewing Co., Ltd	"	27..	Ottawa	"	"	29	"	78.....	721	07
Durocher, P. H	"	27..	"	"	"	29	"	78... ..	47	15
Schwan, W	"	27..	Owen Sound	"	"	29	"	78.....	225	60
Huether, W	"	27..	"	"	"	29	"	78.....	182	62
Heisz, Lawrence	"	27..	"	"	"	29	"	78.....	114	31
Farquharson & Grainger	"	27..	"	"	"	29	"	78.....	95	85
Eaton, Chris	"	27..	"	"	"	29	"	78....	235	11
New Ontario Brewing Co., Ltd	"	27..	"	"	"	29	"	78	510	00
McCarthy, T. C	"	27.	Prescott	"	"	29	"	78.....	498	39
Bowie & Co. Brewery, Ltd.	"	27..	"	"	"	29	"	78.....	297	71
Wiser, J. P., & Sons, Ltd.	"	27..	"	"	"	29	"	78.....	142	85
Devlin, Felix	"	27..	Stratford	"	"	29	"	78.....	109	76
Watson, John	"	27..	"	"	"	29	"	78.....	235	57
Canada Malting Co., Ltd.	"	27..	"	"	"	29	"	78	10	23
O'Keefe Brewery Co., Ltd., The	"	27..	Toronto	"	"	29	"	78 ...	3,825	79
Copland Brewing Co., Ltd.	"	27..	"	"	"	29	"	78.....	2,225	66
Rocot, Casimir	"	27..	"	"	"	29	"	78.....	774	00
Kemp, D. C	"	27..	"	"	"	29	"	78 .. .	182	56
Toronto Brewing & Malting Co	"	27..	"	"	"	29	"	78.....	983	99
Cosgrave Brewery Co., Ltd. The	"	27..	"	"	"	29	"	78.....	1,333	87
Reinhardt, L	"	27..	"	"	"	29	"	78.....	1,853	55
Gooderham & Worts, Ltd	"	27..	"	"	"	29	"	78.... .	1,423	36
Dominion Brewery Co., Ltd., The	"	27..	"	"	"	29	"	78	1,709	63
Anderton & Co	"	27..	"	"	"	29	"	78	127	20
Barrie Bwg. Co., Ltd., The.	"	27 .	"	"	"	29	"	78.....	88	22
Wright, A. J	"	27..	"	"	"	29	"	78.....	40	95
Davies, Thos. H	"	27..	"	"	"	29	"	78.....	5	13
Irion, Albert L	"	28..	Windsor	"	"	29	"	78 . ..	420	00
Hiram Walker & Sons, Ltd.	"	28..	"	"	"	29	"	78.....	2,501	62

EXCISE—*Continued.*

Articles.	To whom paid.	Date.	Divisions.	Under what Authority Refunded.	Amounts.	Totals.
		1908.			$ cts.	$ cts.
Malt—*Con.*	Canada Malting Co., Ltd.	April 28.	Montreal	Refunded under Revised Statutes, cap. 29, sec. 78	5,431 55	
	Dow, W. & Co.	" 28.	"	" " 29 " 78	2,920 36	
	Dawes, Andrew J.	" 28.	"	" " 29 " 78	3,539 95	
	Reinhardt, C. S.	" 28.	"	" " 29 " 78	331 50	
	Molson, J. T.	" 28.	"	" " 29 " 78	2,943 00	
	Tellier, J. A.	" 28.	St. Hyacinthe	" " 29 " 78	116 25	
	Silver Spring Brewery, Ltd.	" 28.	Sherbrooke	" " 29 " 78	944 02	
	Jones, Simeon, Ltd.	" 28.	St. John	" " 29 " 78	390 00	
	Ready, James	" 28.	"	" " 29 " 78	967 50	
	Highland Spring Brewery, Ltd.	" 23.	Halifax	" " 29 " 78	198 90	
	Wickwire, W. N.	" 28.	"	" " 29 " 78	1,214 44	
	Halifax Breweries, Ltd.	" 28.	"	" " 29 " 78	543 53	
	Shea, Patrick	" 38.	Winnipeg	" " 29 " 78	531 68	
	Drewry, E. L.	" 28.	"	" " 29 " 78	354 63	
	Manitoba Brewing & Malting Co., Ltd., The	" 28.	"	" " 29 " 78	30 30	
	Brandon Brewing Co.	" 28.	"	" " 29 " 78	274 73	
	Robinson, Isaac A.	" 28.	"	" " 29 " 78	186 49	
	Canada Malting Co., Ltd., The	" 28.	"	" " 29 " 78	3,319 05	
	Nelson Brewing Co., Ltd.	" 28.	Vancouver	" " 29 " 78	201 75	
	Nelson, Nels	" 28.	"	" " 29 " 78	256 74	
	Klausman, N.	" 28.	"	" " 29 " 78	30 00	
	New York Brewing Co.	" 28.	"	" " 29 " 78	42 75	
	Henderson, Hugh	" 28.	"	" " 29 " 78	125 83	
	Elkhorn Brewing Co.	" 28.	"	" " 29 " 78	52 50	
	Hartinger, Frank	" 28.	"	" " 29 " 78	30 00	
	Fluhrer, John	" 28.	"	" " 29 " 78	97 50	
	Fort Steel Brewing Co.	" 28.	"	" " 29 " 78	498 57	
	Phœnix Brewing Co.	" 28.	"	" " 29 " 78	90 00	
	Enterprise Brewing Co.	" 28.	"	" " 29 " 78	84 03	
	British Columbia Distillery Co., Ltd., The	" 28.	Victoria	" " 29 " 78	72 00	
	Victoria Phœnix Brewing Co., Ltd	" 28.	"	" " 29 " 78	810 00	

	Union Brewing Co.	"	28..	"	"	"	29	"	78	717	24	
	Elliott, Alex.	"	28..	"	"	"	29	"	78.	425	52	
	Calcutt, Henry	"	28..	Peterborough	"	"	29	"	78.	424	40	
	Gauvin, M. & Co	"	28..	Quebec	"	"	29	"	78	30	00	
	Boswell & Bro., Ltd.	"	28..	"	"	"	29	"	78	1,176	38	
	Beauport Brewing Co., The	"	28..	"	"	"	28	"	78	570	00	
	Robitaille, Lorenzo	"	28..	"	"	"	29	"	78.	364	50	
		1907.										112,625 33
Tobacco	Goldstein, B.	May	10..	Montreal	"	"	34	"	238	5	50	
	Macdonald, Sir W. C	"	10..	"	"	"	34	"	238.	112	20	
	American Tobacco Co. of Canada, Ltd., The.	"	10..	"	"	"	34	"	238.	663	40	
	Ward, W.	"	11..	London	"	"	34	"	238.	7	00	
	Nicholson, D.	"	15..	Charlottetown	"	"	34	"	238	148	60	
	Riley, D. A	"	15..	"	"	"	34	"	238	115	40	
	Bollard, A.	"	20..	Toronto	"	"	34	"	259.	0	74	
	McAlpin, W. A.	"	20..	"	"	"	34	"	259.	2	47	
	Solomon, E.	"	20..	Montreal	"	"	34	"	258	13	98	
	Fortier, J. M., Ltd	"	20..	"	"	"	34	"	258.	22	46	
	Goldstein, B.	"	20..	"	"	"	34	"	258.	32	41	
	American Tobacco Co. of Canada, Ltd., The.	"	20..	"	"	"	34	"	258.	1,393	87	
	G. E Tuckett & Son Co., Ltd., The	"	20..	Hamilton	"	"	34	"	258	268	52	
	Tobin, John & Co	"	20..	Halifax	"	"	34	"	238	50	27	
	Spilling Bros., Ltd.	"	20..	Toronto	"	"	34	"	238.	124	70	
	Wilson, Andrew	"	20	"	"	"	34	"	238.	364	60	
	Bell, N.	"	20..	Calgary	"	"	34	"	238.	132	90	
	Shaw, H. V.	"	20..	"	"	"	34	"	238	193	50	
	Landau & Cornack, Ltd.	"	20..	Montreal	"	"	34	"	270.	70	00	
	Fortier, J. M., Ltd.	"	20..	"	"	"	34	"	238	5	37	
	G. E. Tuckett & Son Co., Ltd., The	"	29.	Hamilton	"	"	34	"	238.	725	11	
	Tobin, John & Co	"	29..	Halifax	"	"	34	"	238.	10	77	
	Nicholson, D.	"	29..	Charlottetown	"	"	34	"	238.	21	63	
	Simon, Leiser & Co., Ltd.	"	29..	Victoria	"	"	34	"	238.	104	80	
	Levy, Joseph	"	29..	"	"	"	34	"	238.	18	40	
	Schnoter, F. H	"	29..	"	"	"	34	"	238.	53	00	
	Gold, Thos. F.	"	29..	"	"	"	34	"	238.	67	30	
	Behnsen, H. F. W.	"	29..	"	"	"	34	"	238	158	00	
	Province Cigar Co.	"	29..	"	"	"	34	"	238.	228	70	
	Tietjen, W.	"	29..	Vancouver	"	"	34	"	238.	299	70	
	Schrader, J. H.	"	29..	Hamilton	"	"	34	"	238.	116	00	
	Spilling Bros., Ltd.	"	29..	Toronto	"	"	34	"	238.	51	60	
	Hirsch & Sons, J., Ltd.	"	29..	Montreal	"	"	34	"	238.	230	40	
	Grothé, L. O.	"	30..	"	"	"	34	"	238.	51	20	
	American Tobacco Co. of Canada, Ltd., The.	June	8..	"	"	"	34	"	238	438	70	
	Rock City Tobacco Co., Ltd., The	"	8..	Quebec	"	"	34	"	270.	8	52	

EXCISE—*Continued.*

Articles.	To whom paid.	Date.	Divisions.	Under what Authority Refunded.	Amounts.	Totals.
		1907.			$ cts.	$ cts.
Tobacco -*Con.*	Milligan, Geo	June 8..	Toronto	Refunded under Revised Statutes, cap. 34, sec. 238	678 00	
	Kelly, Geo	" 8..	London	" " 34 " 238	92 40	
	Tuckett Cigar Co., Ltd., The	" 8..	"	" " 34 " 238	147 70	
	McGowan, G. A	" 8..	Kingston	" " 34 " 238	255 30	
	Walsh, A	" 11..	Montreal	" " 34 " 270	160 00	
	Barry, H. D	" 11..	Quebec	" " 34 " 238	434 20	
	Dyer, W. R	" 11..	London	" " 34 " 238	40 90	
	Dyer, J. J	" 11..	"	" " 34 " 238	88 80	
	Fortier, J. M., Ltd	" 18..	Montreal	" " 34 " 259	21 68	
	Goldstein, B	" 18..	"	" " 34 " 259	22 71	
	Bollard, A	" 18..	Toronto	" " 34 " 259	0 62	
	Klebanoff, S	" 18..	"	" " 34 " 259	1 09	
	G. E. Tuckett & Son Co., Ltd., The	" 18..	Hamilton	" " 34 " 259	275 12	
	Solomon, E	" 18..	Montreal	" " 34 " 259	18 78	
	American Tobacco Co. of Canada, Ltd., The	" 18..	"	" " 34 " 259	1,931 36	
	Tuckett Cigar Co., Ltd., The	" 18..	"	" " 34 " 238	335 80	
	Lemesurier, John	" 18..	Quebec	" " 34 " 259	11 20	
	Spilling Bros. Ltd	" 21..	Toronto	" " 34 " 238	49 70	
	Colonial Cigar Co	" 21..	St. John	" " 34 " 238	51 10	
	Younheart, Ed	" 21..	Montreal	" " 34 " 238	258 20	
	Macdonald, Sir W. C	" 21..	"	" " 34 " 238	93 50	
	Goldstein, B	" 22..	"	" " 34 " 238	4 70	
	Brewer, A. H	" 26..	London	" " 34 " 238	160 30	
	Nolan, J. F	" 26..	"	" " 34 " 238	147 40	
	McNee, John	" 26..	"	" " 34 " 238	381 90	
	Dyer, J. J	" 26..	"	" " 34 " 238	59 90	
	Williams, J. E	" 26..	"	" " 34 " 238	43 40	
	Manness, S. R	" 26..	"	" " 34 " 238	42 30	
	Lee, Thomas	" 26..	Winnipeg	" " 34 " 238	284 80	
	Inland Cigar Mfg. Co	" 26..	Vancouver	" " 34 " 238	256 80	
	Blumenstiel, I	July 9..	Hamilton	" " 34 " 238	137 20	
	Tuckett Cigar Co., Ltd., The	" 9..	"	" " 34 " 238	209 10	
	" "	" 9..	London	" " 34 " 238	124 20	

Wilson, Andrew	"	9..	Toronto	"	"	34	"	238	408	80
Tobin, John & Co.	"	9..	Halifax	"	"	34	"	238	10	77
Landau & Cormack, Ltd	"	9..	Montreal	"	"	34	"	270	60	00
American Tobacco Co. of Canada, Ltd., The	"	9..	"	"	"	34	"	238	807	10
McKenna, A	"	15..	Pictou	"	"	34	"	238	436	96
Hirsch, J. & Sons, Ltd	"	19..	Montreal	"	"	34	"	238	212	00
Goulet, R	"	19..	"	"	"	34	"	238	347	40
Tuckett Cigar Co., Ltd., The	"	19..	"	"	"	34	"	238	293	10
" "	"	19..	Hamilton	"	"	34	"	238	216	60
Smith, Joseph	"	19..	London	"	"	34	"	238	188	10
McDonald, R. D.	"	19..	"	"	"	34	"	238	654	00
McKenna, A.	"	24..	Pictou	"	"	34	"	270	81	60
MacDonald, Sir W. C.	"	24..	Montreal	"	"	34	"	238	111	10
Fortier, J. M., Ltd	"	24..	"	"	"	34	"	238	1,828	80
Fair, T. J. & Co., Ltd.	"	24..	Brantford	"	"	34	"	238	131	20
Firstbrook, Joseph	"	24..	London	"	"	34	"	238	98	80
Bollard, A	"	25..	Toronto	"	"	34	"	259	0	99
Klebanoff, S.	"	25..	"	"	"	34	"	259	1	84
McAlpin, W. A.	"	25..	"	"	"	34	"	259	3	37
Walsh, A	"	25..	Montreal	"	"	34	"	259	22	02
Henry, James	"	25..	"	"	"	34	"	259	13	76
Oriental Tobacco Co.	"	25..	"	"	"	34	"	259	20	52
Solomon, E.	"	25..	"	"	"	34	"	259	15	97
Fortier, J. M., Ltd	"	25..	"	"	"	34	"	259	18	63
Goldstein, B	"	25..	"	"	"	34	"	259	38	42
American Tobacco Co. of Canada, Ltd., The	"	25..	"	"	"	34	"	259	1,826	70
Landau & Cormack, Ltd	"	25..	"	"	"	34	"	259	15	17
Morris, Philip & Co., Ltd.	"	25..	"	"	"	34	"	259	48	69
G. E. Tuckett & Son Co., Ltd., The	"	25..	Hamilton	"	"	34	"	259	273	90
G. E. Tuckett & Son Co., Ltd., The	"	25..	"	"	"	29	"	78	1	75
Kelly, Geo.	Aug.	2..	London	"	"	34	"	238	7	90
G. E. Tuckett & Son Co., Ltd., The	"	2..	Hamilton	"	"	34	"	238	534	47
Macdonald, Sir W. C	"	2..	Montreal	"	"	34	"	238	158	80
Rock City Tobacco Co., Ltd., The	"	9..	Quebec	"	"	34	"	259	38	51
McKenna, A.	"	9..	Pictou	"	"	34	"	238	55	84
Landau & Cormack, Ltd	"	9..	Montreal	"	"	34	"	270	100	00
American Tobacco Co. of Canada, Ltd., The	"	9..	"	"	"	34	"	238	452	30
Hirsch, J. & Sons., Ltd	"	9..	"	"	"	34	"	238	217	20
Kilbourne, W. P	"	9..	Winnipeg	"	"	34	"	238	290	50
Kelly, Geo.	"	9..	London	"	"	34	"	238	128	60
Milligan, Geo.	"	9..	Toronto	"	"	34	"	238	748	00
Blumenstiel, I	"	9..	Hamilton	"	"	34	"	238	172	10

EXCISE—*Continued.*

Articles.	To whom paid.	Date.	Divisions.	Under what Authority Refunded.	Amounts.	Totals.
		1907			$ cts.	$ cts.
Tobacco—*Con.*	Geo. E. Tuckett & Son Co., Ltd., The	Aug. 9.	Hamilton	Refunded under Revised Statutes, cap. 34 sec. 238	798 39	
	Payne, J. B	" 13.	Sherbrooke	" " 34 " 238	152 00	
	Jacobs, H. & Co	" 13.	Montreal	" " 34 " 238	692 40	
	Goldstein, B	" 13.	"	" " 34 " 238	7 69	
	McKenna, A	" 13.	Pictou	" " 34 " 238	24 56	
	Tobin, John & Co	" 13.	Halifax	" " 34 " 238	39 79	
	Geo. E. Tuckett & Son Co., Ltd., The	" 22.	Hamilton	" " 34 " 259	256 60	
	Klebanoff, S	" 22.	Toronto	" " 34 " 259	1 56	
	McAlpin, W. A	" 22.	"	" " 34 " 259	2 50	
	Henry, James	" 22.	Montreal	" " 34 " 259	4 40	
	Landau & Cormack, Ltd	" 22.	"	" " 34 " 259	8 64	
	Morris, Philip & Co., Ltd	" 22.	"	" " 34 " 259	10 40	
	Walsh, A	" 22.	"	" " 34 " 259	12 42	
	Oriental Tobacco Co.	" 22.	"	" " 34 " 259	4 47	
	Solomon, E	" 22.	"	" " 34 " 259	18 28	
	Fortier, J. M., Ltd	" 22.	"	" " 34 " 259	31 40	
	Goldstein, B	" 22.	"	" " 34 " 259	45 80	
	American Tobacco Co. of Canada, Ltd., The	" 22.	"	" " 34 " 259	2,629 69	
	Walsh, A	" 22.	"	" " 34 " 270	69 40	
	Rock City Tobacco Co., Ltd., The	" 22.	Quebec	" " 34 " 270	4 63	
	Bauld Bros., Ltd	" 23.	Halifax	" " 34 " 238	9 35	
	Hynes, Joseph	" 23.	Hamilton	" " 34 " 238	88 70	
	McKenna, A	Sept. 5.	Pictou	" " 34 " 238	17 68	
	Fortier, J. M., Ltd	" 5.	Montreal	" " 34 " 238	252 40	
	Tobin, John & Co	" 5.	Halifax	" " 34 " 238	10 77	
	Macdonald, Sir W. C	" 5.	Montreal	" " 34 " 238	93 59	
	American Tobacco Co. of Canada, Ltd., The	" 5.	"	" " 34 " 238	230 10	
	Atkins, E. R	" 5.	London	" " 34 " 238	44 10	
	Spilling Bros., Ltd	" 5.	Toronto	" " 34 " 238	37 60	
	Grothé, L. O	" 5.	Montreal	" " 34 " 238	606 50	
	Gignac, R. T	" 10.	Windsor	" " 34 " 238	26 90	

Bauld Bros., & Co	"	10	Halitax	"	"	34	"	238	56 38
Wentzells, Ltd	"	10	"	"	"	34	"	238	17 95
Geo. E. Tuckett & Son Co., Ltd., The	"	19	Hamilton	"	"	34	"	259	290 47
McAlpin, W. A	"	19	Toronto	"	"	34	"	259	10 42
American Tobacco Co. of Canada, Ltd., The	"	19	Montreal	"	"	34	"	259	2,590 05
Fortier, J. M., Ltd	"	19	"	"	"	34	"	259	28 63
Goldstein, B	"	19	"	"	"	34	"	259	38 53
Solomon, E	"	19	"	"	"	34	"	259	16 12
Geo. E. Tuckett & Son Co., Ltd., The	"	19	Hamilton	"	"	34	"	238	973 90
G. E. Tuckett & Son Co., Ltd., The	"	21	"	"	"	34	"	238	11 00
Tobin, John & Co	"	24	Halifax	"	"	34	"	238	17 95
Bauld, Bros., Ltd	"	24	"	"	"	34	"	238	35 90
McKenna, A	"	24	Pictou	"	"	34	"	238	6 00
Walsh, A	"	26	Montreal	"	"	34	"	270	200 00
Fortier, J. M., Ltd	"	26	"	"	"	34	"	270	47 18
G. E. Tuckett & Son Co., Ltd., The	"	28	Hamilton	"	"	34	"	238	253 60
Macdonald, Sir W. C	Oct.	10	Montreal	"	"	34	"	238	187 00
American Tobacco Co. of Canada, Ltd., The	"	10	"	"	"	34	"	238	16 90
Bollard, A	"	18	Toronto	"	"	34	"	259	1 43
McAlpin, W. A	"	18	"	"	"	34	"	259	4 31
Henry, James	"	18	Montreal	"	"	34	"	259	8 59
Morris, Philip & Co., Ltd	"	18	"	"	"	34	"	259	30 29
Walsh, A	"	18	"	"	"	34	"	259	18 30
Oriental Tobacco Co	"	18	"	"	"	34	"	259	13 27
Landau & Cormack, Ltd	"	18	"	"	"	34	"	259	19 88
Solomon, E	"	18	"	"	"	34	"	259	16 06
Goldstein, B	"	18	"	"	"	34	"	259	20 95
Fortier, J. M., Ltd	"	18	"	"	"	34	"	259	26 10
American Tobacco Co. of Canada, Ltd., The	"	18	"	"	"	34	"	259	2,057 50
G. E. Tuckett & Son Co., Ltd., The	"	18	Hamilton	"	"	34	"	259	233 62
G. E. Tuckett & Son Co., Ltd., The	"	18	"	"	"	29	"	78	1 00
G. E. Tuckett & Son Co., Ltd., The	"	22	"	"	"	34	"	238	788 71
Walsh, A	"	24	Montreal	"	"	34	"	270	180 00
Tobin, John & Co	"	24	Halifax	"	"	34	"	238	28 72
McKenna, A	"	24	Pictou	"	"	34	"	238	47 92
American Tobacco Co. of Canada, Ltd., The	Nov.	7	Montreal	"	"	34	"	238	1,344 90
McKenna, A	"	7	Pictou	"	"	34	"	238	6 16
"	"	21	"	"	"	34	"	238	114 08

EXCISE—*Continued.*

Articles.	To whom paid.	Date.	Divisions.	Under what Authority Refunded.	Amounts.	Totals.
		1907.			$ cts.	$ cts.
Tobacco—*Con.*	G. E. Tuckett & Son Co., Ltd., The	Nov. 21.	Hamilton	Refunded under Revised Statutes, cap. 34, sec. 259	218 36	
	Fortier, J. M., Ltd	" 21.	Montreal	" " 34 " 238	22 39	
	American Tobacco Co. of Canada, Ltd., The	" 21.	"	" " 34 " 238	2,449 77	
	Rock City Tobacco Co., Ltd., The	" 25.	Quebec	" " 34 " 238	45 29	
	Macdonald, Sir W. C	" 25.	Montreal	" " 34 " 238	98 20	
	Tobin, John & Co	" 28.	Halifax	" " 34 " 238	10 77	
	American Tobacco Co., of Canada, Ltd., The	Dec. 6.	Montreal	" " 34 " 238	126 40	
	Walsh, A	" 6.	"	" " 34 " 270	40 00	
	McAlpin, W. A	" 17.	Toronto	" " 34 " 259	5 80	
	Klebanoff, S	" 17.	"	" " 34 " 259	2 43	
	G. E. Tuckett & Son Co., Ltd., The	" 17.	Hamilton	" " 34 " 259	248 57	
	Fortier, J. M., Ltd	" 17.	Montreal	" " 34 " 259	20 41	
	American Tobacco Co. of Canada, Ltd., The	" 17.	"	" " 34 " 259	2,207 59	
	Goldstein, B	" 17.	"	" " 34 " 259	42 96	
	Landau & Cormack, Ltd	" 17.	"	" " 34 " 259	32 51	
	Solomon, E	" 17.	"	" " 34 " 259	35 42	
	Fortier, J. M., Ltd	" 18.	"	" " 34 " 238	11 02	
	Billman, Chisholm & Co	" 18.	Halifax	" " 34 " 238	20 64	
	McKenna, A	" 18.	Pictou	" " 34 " 238	11 52	
	G. E. Tuckett & Son Co., Ltd., The	" 18.	Hamilton	" " 34 " 238	1,288 57	
	Macdonald, Sir W. C	" 20.	Montreal	" " 34 " 238	187 00	
	Walsh, A	" 20.	"	" " 34 " 270	140 00	
	Geo. E. Tuckett & Son Co., Ltd., The	Dec. 28.	Hamilton	" " 34 " 238	1,148 94	
	Tobin, John & Co	" 28.	Halifax	" " 34 " 238	49 14	
		1908.				
	Macdonald, Sir W.C	Jan. 7.	Montreal	" " 29 " 78	128 50	
	American Tobacco Co. of Canada, Ltd., The	" 10.	"	" " 34 " 238	101 00	

| | | |

EXCISE—*Concluded.*

Articles.	To whom paid.	Date.	Divisions.	Under what Authority Refunded.	Amounts.	Totals.
		1908			$ cts.	$ cts.
Tobacco—*Con*	Geo. E. Tuckett & Son Co., Ltd., The....	Mar. 17..	Hamilton.....	Refunded under Revised Statutes, cap. 34 sec. 259.....	259 53	
	Klebanoff, S.....	" 17..	Toronto	" " 34 " 259.....	1 34	
	Goldstein, B.....	" 17..	Montreal.....	" " 34 " 259.....	14 15	
	Fortier, J. M., Ltd.....	" 17..	"	" " 34 " 259.....	15 17	
	Solomon, E.....	" 17..	"	" " 34 " 259.....	15 71	
	American Tobacco Co. of Canada, Ltd., The.....	" 17..	"	" " 34 " 259.....	2,328 36	
	Hnry, James.....	" 25..	"	" " 34 " 270.....	20 00	
	American Tobacco Co. of Canada, Ltd., The.....	" 25..	Montreal.....	" " 34 " 270.....	1,226 76	
	Fair, T. J., & Co., Ltd.....	April 7..	Brantford.....	" " 34 " 238.....	4 30	
	American Tobacco Co. of Canada, Ltd., The.....	" 7..	Montreal.....	" " 34 " 238.....	1,102 20	
	Tobin, John, & Co.....	" 15..	Halifax	" " 34 " 238.....	19 37	
	Bollard, A.....	" 15..	Toronto	" " 34 " 259.....	1 95	
	McAlpin, W. A.....	" 15..	"	" " 34 " 259.....	9 72	
	Henry, James.....	" 15..	Montreal.....	" " 34 " 259.....	3 76	
	Walsh, A.....	" 15..	"	" " 34 " 259.....	19 30	
	Morris, Philip, & Co., Ltd..	" 15..	"	" " 34 " 259.....	20 89	
	Landau & Cormack, Ltd....	" 15..	"	" " 34 " 259.....	6 65	
	Oriental Tobacco Co.....	" 15..	"	" " 34 " 259.....	11 02	
	Fortier, J. M., Ltd.....	" 15..	"	" " 34 " 259.....	10 54	
	Goldstein, B.....	" 15..	"	" " 34 " 259.....	14 63	
	Solomon, E.....	" 15..	"	" " 34 " 259.....	16 77	
	American Tobacco Co. of Canada, Ltd., The.....	" 15..	"	" " 34 " 238.....	1,963 38	
	Geo. E. Tuckett & Son Co., Ltd., The.....	" 15..	Hamilton.....	" " 34 " 238.....	305 00	
	Macdonald, Sir W. C.....	" 15..	Montreal.....	" " 34 " 238.....	22 10	
	Nicholson, D.....	" 15..	Charlottetown	" " 34 " 238.....	13 51	
	Gignac, R. T.....	" 21..	Windsor	" " 34 " 238.....	13 60	
	Henry, James.....	" 21..	Montreal.....	" " 34 " 238.....	53 60	
	" "	" 21..	"	" " 34 " 238.....	4 72	
	McKenna, A.....	" 23..	Pictou.....	" 34 " 238.....	61 76	
						62,785 27

		1907							
Cigars	Forward, H. F	May	10	Belleville	"	"	34 " 238	35 43	
	Tuckett Cigar Co., Ltd., The	Sept.	28	Hamilton	"	"	34 " 238	0 15	
	Ryall, C. A	Dec.	3	Windsor	"	"	34 " 238	56 25	
									91 83
Officer's salary	Allen, Solomon	May	10	Brantford	"	"	34 " 238	225 00	
		1908							
	" "	April	2	"	"	"	34 " 238	300 00	
									525 00
Manufacturers in bond	Bouthillier, E.	Feb.	14	Montreal	"	"	34 " 238		25 00
		1907							
Excise Seizures	Leclerc, J	May	30	Calgary	"	"	34 " 238	50 00	
	Hoaglin, Mrs. Anna	Aug.	2	"	"	"	34 " 238	100 00	
	Chow, Sam	"	2	"	"	"	34 " 238	100 00	
									250 00
Bonded Excise W.H. Licenses		1908							
	Mitchel, F. J. R.	Feb.	13	Peterborough	"	"	34 " 238	10 00	
	Calgary Wine & Spirits Co., The	"	28	Calgary	"	"	34 " 238	12 50	
	Moodie Liquor Co., Ltd., The	"	28	"	"	"	34 " 238	10 00	
									32 50
							Total Excise		275,734 90
Weights and Measures	Canadian Bridge Co., The	"	28	Walkerville	"	"	34 " 238	10 59	
	Davidson Manufacturing Co	Mar.	10	Montreal	"	"	34 " 238	5 00	
	Howard & Co., S	May	1	St. John	"	"	34 " 238	4 20	
	McAvity & Sons	"	1	Montreal	"	"	34 " 238	1 20	
	Davidson Manufacturing Co	"	1	"	"	"	34 " 238	7 75	
									28 54
Electric Light Registration Fees	Weyburn Machine E. L. Co.	1907 Oct.	2	Weyburn, Sask	"	"	34 " 233		15 00
Minor Public Works	Roberts, P. T.	Dec.	3	Winnipeg	"	"	34 " 238		100 00
Law Stamps	Dr. Wm. Bourke	"	3	Dawson, Y.D.	"	"	34 " 238		11 75
							Grand Total		275,890 19

W. J. GERALD,
Deputy Minister.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

No. 17.—DEPARTMENTAL EXPENDITURES FOR 1907-1908.

(For Details see Appendix B.)

Due by sundry persons, April 1, 1907.	Disbursed by the Receiver General.	Deductions for			Totals.	——	Salaries.	Contingencies.	Due by sundry persons March 31, 1908.	Totals.
		Superannuation.	Insurance.	Retirement.						
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.		$ cts.	$ cts.	$ cts.	$ cts.
	7,000 00				7,000 00	Minister of Inland Revenue	7,000 00			7,000 00
	46,260 56	455 31	158 34	793 47	47,667 68	Departmental officers	47,667 68			47,667 68
	282 20				282 20	Subscription to newspapers		282 20		282 20
	1,877 18				1,877 18	Extra clerks, &c		1,877 18		1,877 18
	910 31				910 31	Telegraph companies and telephones		910 31		910 31
	1,351 76				1,351 76	Stationery		1,351 76		1,351 76
	1,904 76				1,904 76	Printing and lithographing		1,904 76		1,904 76
	159 33				159 33	Postage		159 33		159 33
16 66	424 03				440 69	Sundry persons		424 03	16 66	440 69
16 66	60,170 13	455 31	158 34	793 47	61,593 91	Totals	54,667 68	6,909 57	16 66	61,593 91

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

W. J. GERALD,
Deputy Minister.

WEIGHTS AND MEASURES, GAS, ELECTRIC LIGHT AND LAW STAMPS.

No. 18.—Statement showing amount of Revenue accrued during the year ended March 31, 1908.

DR.

	Weights and Measures Stamps.	Gas Stamps.	Electric Light Stamps.	Law Stamps.				Totals.
				Supreme Court.	Exchequer Court.	Yukon Territorial Court.	Yukon Mining Court.	
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
To amount of stamps destroyed or returned by distributors	355 60		0 75					356 35
To commission allowed				45 00	252 60			297 60
To amount of stamps remaining in hands of distributors, March 31, 1908	76,867 66	49,989 80	40,198 75	34 55		6,506 70	1,795 00	175,392 46
To balance, being the revenue during the year ended March 31, 1908	82,918 32	44,012 50	36,538 45	1,330 45	4,799 40	3,750 95	272 25	173,622 32
Totals	160,141 58	94,002 30	76,737 95	1,410 00	5,052 00	10,257 65	2,067 25	349,668 73

CR.

By amount of stamps in the hands of distributors April 1, 1907	68,006 08	44,252 30	39,387 95			10,257 65	2,067 25	163,971 23
By stamps issued by the Inland Revenue Department during the year ended March 31, 1908	92,135 50	49,750 00	37,350 00	1,410 00	5,052 00			185,697 50
Totals	160,141 58	94,002 30	76,737 95	1,410 00	5,052 00	10,257 65	2,067 25	349,668 73

Inland Revenue Department,
Ottawa, June 11, 1908.

W, J. GERALD,
Deputy Minister.

DR. No. 19 (A).—INSPECTION DIVISIONS in Account with Revenue. CR.

BALANCES DUE BY INSPECTORS, APRIL 1, 1907.		Stamps issued to Inspectors.	Seizures and Penalties.	Other Receipts	Totals.	DIVISIONS.	Stamps returned or destroyed.	Deposited to the Credit of the Receiver General.	BALANCES DUE BY INSPECTORS, MARCH 31, 1908.		Totals.
Stamps on hand.	Cash on hand.								Stamps on hand.	Cash on hand.	
cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
4,068 20		5,745 00	15 50		9,828 70	Belleville	61 00	6,286 55	3,481 15		9,828 70
4,427 80		9,642 00			14,069 80	Hamilton		10,780 41	3,289 39		14,069 80
2,719 19		4,140 00			6,859 19	Ottawa	3 50	3,979 65	2,876 04		6,859 19
6,069 68		13,400 00		8 00	19,477 68	Toronto	60 85	10,690 38	8,726 45		19,477 68
8,062 55		9,800 00			17,862 55	Windsor		10,049 50	7,813 05		17,862 55
25,347 42		42,727 00	15 50	8 00	68,097 92	*Ontario*	125 35	41,786 49	26,186 08		68,097 92
19,096 25		15,425 00	55 00	16 00	34,592 25	Montreal		15,606 45	18,985 80		34,592 25
5,145 95		4,775 00			9,920 95	Quebec	0 75	4,674 30	5,245 90		9,920 95
2,679 26		4,605 00	3 50		7,287 76	St. Hyacinthe		2,737 90	4,549 86		7,287 76
1,446 25		2,150 00			3,596 25	Three Rivers		1,715 85	1,880 40		3,596 25
28,367 71		26,955 00	58 50	16 00	55,397 21	*Quebec*	0 75	24,734 50	30,661 96		55,397 21
899 48		2,310 00			3,209 48	*St. John, N.B.*		2,035 88	1,173 60		3,209 48
242 82		1,306 50			1,549 32	Cape Breton	229 50	802 72	517 10		1,549 32
505 55		1,956 00			2,461 55	Halifax		1,178 61	1,282 94		2,461 55
2,213 61		1,086 00			3,299 61	Pictou		989 89	2,309 72		3,299 61
2,961 98		4,348 50			7,310 48	*Nova Scotia*	229 50	2,971 22	4,109 76		7,310 48
790 92		522 50		5 00	1,318 42	*Charlottetown, P.E.I.*		579 18	739 24		1,318 42

3,080 68		8,825 00			11,905 68	*Winnipeg, Man*		6,986 95	4,918 73	11,905 68
808 69		3,760 00			4,568 69	*Calgary, Alberta*		2,297 50	2,271 19	4,568 69
909 80		1,660 00			2,569 80	Nelson		641 30	1,928 50	2,569 80
881 40		1,027 50			1,908 90	Vancouver		901 30	1,007 60	1,908 90
1,791 20		2,687 50			4,478 70	*British Columbia*		1,542 60	2,936 10	4,478 70
3,958 00					3,958 00	*Dawson, Yukon*		87 00	3,871 00	3,958 00
					160,244 58	Totals		83,021 32		160,244 58
					28 54	Refunds, as per statement No. 16.		28 54		28 54
68,006 08		92,135 50	74 00	29 00	160,216 04	Grand Totals	355 60	82,992 78	76,867 66	160,216 04

INLAND REVENUE DEPARTMENT,
OTTAWA. June 11, 1908.

J. W. GERALD,
Deputy Minister.

WEIGHTS AND MEASURES, 1907–1908.

No. 19 (B).—Deputy Inspectors of the Old Divisions in Account with Revenue.

Dr.			Cr.	
Balances due April 1, 1907. — Cash on hand.	Totals.	Divisions.	Balances due Mar. 31, 1908. — Cash on hand.	Totals.
$ cts.	$ cts.		$ cts.	$ cts.
87 10	87 10	.....Essex, Ont.....	87 10	87 10
5 62	5 62	.....Hull, Que.....	5 62	5 62
92 72	92 72		92 72	92 72

W. J. GERALD,
Deputy Minister.

Inland Revenue Department,
Ottawa, June 11, 1908.

DR. No. 20 (A).—INSPECTION DIVISIONS in Account with Expenditures. CR.

Amounts received from Department to meet Expenditures.	Deductions from Salaries for		Totals.	Divisions.	Expenditures Authorized by the Department.						Totals.
	Superannuation.	Guarantee			Salaries.	Special Assistance	Seizures.	Rent.	Travelling Expenses.	Sundries.	
$ cts	$ cts.	$ cts.	$ cts.		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
7,523 86	39 00	9 75	7,572 61	Belleville	3,382 75	967 25	.....	419 25	2,195 50	607 86	7,572 61
7,716 77	16 00	14 40	7,747 21	Hamilton	5,962 19	.....	.....	.....	1,678 34	106 68	7,747 21
5,645 71	12 50	10 50	5,668 71	Ottawa	4,224 88	150 00	.....	.....	1,152 39	141 44	5,668 71
7,710 32	16 04	12 81	7,739 17	Toronto	5,131 75	483 36	.....	.....	1,946 76	177 30	7,739 17
7,158 56	31 96	11 25	7,201 77	Windsor	4,724 74	287 09	.....	.....	1,898 06	291 88	7,201 77
35,755 22	115 50	58 71	35,929 47	*Ontario*	23,426 31	1,887 70	.....	419 25	8,871 05	1,325 16	35,929 47
10,490 83	48 00	15 75	10,554 58	Montreal	6,483 00	763 33	.....	876 75	2,203 58	227 92	10,554 58
9,868 84	38 60	17 10	9,924 54	Quebec	6,797 62	599 94	.....	300 00	1,835 17	391 81	9,924 54
4,031 16	.....	8 25	4,039 41	St. Hyacinthe	2,781 52	.....	.....	.....	1,126 50	131 39	4,039 41
2,595 80	.....	5 40	2,601 20	Three Rivers	1,599 96	.....	.....	.....	960 33	40 91	2,601 20
26,986 63	86 60	46 50	27,119 73	*Quebec*	17,662 10	1,363 27	.....	1,176 75	6,125 58	792 03	27,119 73
3,367 58	.....	9 00	3,376 58	*St. John, N.B.*	2,966 63	.....	.....	.....	298 85	111 10	3,376 58
1,396 83	.....	3 60	1,400 43	Cape Breton	849 96	.....	.....	50 00	477 25	23 22	1,400 43
3,532 51	.....	5 40	3,537 91	Halifax	1,749 84	799 92	.....	400 00	422 44	165 71	3,537 91
2,0 7 68	19 96	5 40	2,063 04	Pictou	1,699 96	.....	.....	.....	264 33	98 75	2,063 04
6,967 02	19 96	14 40	7,001 38	*Nova Scotia*	4,299 76	799 92	.....	450 00	1,164 02	287 68	7,001 38
1,972 42	.....	5 40	1,977 82	*Charlottetown, P.E.I.*	1,658 22	.....	.....	.....	240 48	79 12	1,977 82

WEIGHTS AND MEASURES, 1907-1908.

Dr. No. 20 (A).—Inspection Divisions in Account with Expenditure—*Concluded.* Cr.

Amounts received from Department to meet Expenditures.	Deductions from Salaries for		Totals.	Divisions.	Expenditures Authorized by the Department.						Totals.
	Superannuation.	Guarantee			Salaries.	Special Assistance	Seizures.	Rent.	Travelling Expenses.	Sundries.	
$ cts.	$ cts.	$ cts.	$ cts.		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
6,011 41	3 80	11 47	6,026 68	....Winnipeg	3,318 60	967 25			1,607 94	132 89	6,026 68
2,778 35	19 96	5 40	2,803 71	....Calgary	1,750 00			18 00	993 95	41 76	2,803 71
8,789 76	23 76	16 87	8,830 39	.....*Manitoba and Alberta*	5,068 60	967 25		18 00	2,601 89	174 65	8,830 39
1,701 17		3 60	1,704 77	....Nelson	974 97				674 90	54 90	1,704 77
3,005 38		7 08	3,012 46	..Vancouver	2,201 76			485 00	91 25	234 45	3,012 46
4,706 55		10 68	4,717 23	.....*British Columbia*	3,176 73			485 00	766 15	289 35	4,717 23
1,019 15		3 60	1,022 75	.....*Dawson*	1,000 00					22 75	1,022 75
2,919 36			2,919 36	....Chief Inspector	2,600 00				314 17	5 19	2,919 36
3,325 05			3,325 05	.. General contingencies						3,325 05	3,325 05
98 67			98 67	..Metric system						98 67	98 67
1,701 98			1,701 98	....Printing						1,701 98	1,701 98
751 01			751 01	....Stationery						751 01	751 01
37 10			37 10	....Lithographing						37 10	37 10
449 86			449 86	....Provisional allowance						449 86	449 86
2,233 86			2,233 86	..International Committee of Weights and Measures						2,233 86	2,233 86
101,081 22	245 86	165 16	101,492 24	..... Grand totals	61,858 35	5,018 14		2,549 00	20,382 19	11,684 56	101,492 24

W. J. GERALD,
Deputy Minister.

Inland Revenue Department,
Ottawa, June 11, 1908.

WEIGHTS AND MEASURES, 1907–1908.

DR. No. 20 (B).—OLD INSPECTION DIVISIONS in Account with Expenditures. CR.

Balances due by sundry persons, April 1, 1907.	Totals.	Divisions.	Balances due by sundry persons March 31, 1908.	Totals.
$ cts.	$ cts.		$ cts.	$ cts.
39 56	39 56	Essex	39 56	39 56
33 53	33 53	Waterloo	33 53	33 53
73 09	73 09	*Ontario*	73 09	73 09
0 33	0 33	Drummond	0 33	0 33
41 45	41 45	Laval	41 45	41 45
26 88	26 88	Montmorency	26 88	26 88
27 51	27 51	Richelieu	27 51	27 51
96 17	96 17	*Quebec*	96 17	96 17
24 00	24 00	Lunenburg, Nova Scotia	24 00	24 00
193 26	193 26	Totals	193 26	193 26

W. J. GERALD.
Deputy Minister.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

DR. No. 21.—INSPECTION DISTRICTS in Account with Revenue. CR.

BALANCES DUE BY INSPECTORS, APRIL 1, 1907.		Stamps issued to Inspectors.	Penalties.	Totals.	DISTRICTS.	Returned damaged Stamps.	Deposited to the credit of the Receiver General.	BALANCES DUE BY INSPECTORS, MARCH 31, 1908.		Totals.
Stamps on hand.	Cash on hand.							Stamps on hand.	Cash on hand.	
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
1,136 25				1,136 25	Barrie		101 50	1,034 75		1,136 25
1,081 50		450 00		1,531 50	Belleville		543 00	988 50		1,531 50
1,591 25		675 00		2,266 25	Berlin		374 25	1,892 00		2,266 25
738 25		75 00		813 25	Brockville		219 50	593 75		813 25
251 25				251 25	Cobourg		176 25	75 00		251 25
253 00		50 00		303 00	Cornwall		54 75	248 25		303 00
1,618 00		500 00	20 00	2,138 00	Guelph		469 25	1,668 75		2,138 00
2,705 50		5,825 00		8,530 50	Hamilton		5,373 75	3,156 75		8,530 50
608 75				608 75	Kingston		308 25	300 50		608 75
88 00		325 00		413 00	Listowel		46 50	366 50		413 00
1,958 25		3,650 00		5,608 25	London		3,801 50	1,806 75		5,608 25
355 75				355 75	Napanee		57 00	298 75		355 75
8,367 00		1,250 00		9,617 00	Ottawa		2,133 25	7,483 75		9,617 00
299 50		550 00		849 50	Owen Sound		107 25	742 25		849 50
623 25		275 00		898 25	Peterborough		247 00	651 25		898 25
459 50		625 00		1,084 50	Sarnia		476 25	608 25		1,084 50
1,154 25		100 00		1,254 25	Stratford		139 25	1,115 00		1,254 25
3,573 30		16,500 00		20,073 30	Toronto		12,448 25	7,625 05		20,073 30
1,706 00		325 00		2,031 00	Woodstock		327 75	1,703 25		2,031 00
28,568 55		31,175 00	20 00	59,763 55	*Ontario*		27,404 50	32,359 05		59,763 55
2,807 00		8,625 00		11,432 00	Montreal		9,347 75	2,084 25		11,432 00
1,932 00		1,875 00		3,807 00	Quebec		1,075 25	2,731 75		3,807 00
316 50		175 00		491 50	Sherbrook		77 50	414 00		491 50
1,068 25				1,068 25	St. Hyacinthe		78 50	989 75		1,068 25
6,123 75		10,675 00		16,798 75	*Quebec*		10,579 00	6,219 75		16,798 75

690 50				690 50	Fredericton		36 75	653 75		690 50
1,058 00		250 00		1,308 00	St. John		597 50	710 50		1,308 00
1,748 50		250 00		1,998 50	*New Brunswick*		634 25	1,364 25		1,998 50
1,008 25		1,475 00		2,483 25	*Halifax, N. S.*		376 25	2,107 00		2,483 25
649 25				649 25	*Charlottetown, P.E.I.*		84 25	565 00		649 25
1,568 75		2,250 00		3,818 75	*Winnipeg, Man.*		2,317 75	1,501 00		3,818 75
612 25		325 00		937 25	Nanaimo		36 00	901 25		937 25
868 00		175 00		1,043 00	New Westminster		72 00	971 00		1,043 00
2,386 75		1,750 00		4,136 75	Vancouver		1,808 00	2,328 75		4,136 75
718 25		1,675 00		2,393 25	Victoria		720 50	1,672 75		2,393 25
4,585 25		3,925 00		8,510 25	*British Columbia*		2,636 50	5,873 75		8,510 25
44,252 30		49,750 00	20 00	94,022 30	Totals		44,032 50	49,989 80		94,022 30

W. J. GERALD,
Deputy Minister.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

GAS INSPECT

DR. No. 22. INSPECTION DISTRICTS IN

Balances due by Inspectors, April 1, 1907.	Amounts received from Department to meet Expenditures.	Deductions from Salaries for			Totals.	Districts.
		Superannuation.	Retirement.	Guarantee.		
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	
.....	94 40	2 00	.....	3 60	100 00	... Barrie .....
.....	598 94	7 04	.....	6 48	612 46	....Belleville... .....
.....	172 78	.....	.....	3 60	176 38	....Berlin..... .....
.....	14 90	.....	.....	.....	14 90	...Brockville .....
.....	149 70	2 00	.. ....	3 60	155 30	....Cobourg.....
.....	131 30	2 00	.....	3 60	136 90	... Cornwall.....
.....	227 86	4 00	.....	3 60	235 46	....Guelph..... ..
.....	4,041 48	36 00	... .	9 00	4,086 48	.. Hamilton. ..... .
.....	513 34	.....	....	3 60	516 94	...Kingston.....
.....	186 80	.....	.....	3 60	190 40	....Listowel.....
.....	2,139 75	.....	.....	5 35	2,145 10	... London..... ... .
.....	27 70	.....	.....	.....	27 70	....Napanee.....
.....	2,597 27	.....	.....	6 48	2,603 75	....Ottawa.....
.....	321 40	.....	.....	3 60	325 00	....Owen Sound.....
.....	150 40	.....	.....	3 60	154 00	....Peterborough.....
.....	5 45	.....	.....	.....	5 45	.Sarnia.....
.....	205 90	4 00	.. ..	3 60	213 50	....Stratford.....
.....	4,595 01	34 04	.. ..	8 25	4,637 33	...Toronto.....
.....	119 45	.....	.....	1 80	121 25	...Woodstock ... ...
.....	16,293 86	91 08	... .	73 36	16,458 30	..... *Ontario*.....
.....	4,646 49	.....	.....	11 09	4,657 49	....Montreal. .....
.....	1,705 84	22 04	.. .. ..	7 20	1,735 08	... Quebec..... ... .
.....	241 56	3 60	... .	5 40	249 96	....Sherbrooke.....
.. . .	98 20	....	.....	1 80	100 00	....St. Hyacinthe .....
.....	6,692 09	25 04	.....	25 40	6,742 53	. ....*Quebec*.....
.....	186 30	.....	.....	1 80	188 10	... Fredericton. .....
.....	1,180 35	.....	.....	3 60	1,183 95	...St. John.....
.....	1,366 65	....	....	5 40	1,372 05	..... *New Brunswick*. .....
.....	2,380 36	1 96	.....	6 30	2,388 62	....Halifax. ....
12 88	... .	.....	.....	.....	12 88	....Pictou.....
12 88	2,380 36	1 96	.... .	6 30	2,401 50	. .. *Nova Scotia*.....
....	462 28	... ...	.....	3 60	465 88	.....*Charlottetown, P.E.I.*.....
....	1,504 24	.....	....	6 48	1,510 72	.... *Winnipeg, Man.*.... ..... .
. .....	89 88	.....	.....	3 36	93 24	....Nanaimo.....
... .	91 40	.....	5 00	3 60	100 00	....New Westminister .....
.....	395 98	4 50	. . ....	2 70	403 18	....Vancouver..... .....
.....	216 87	4 47	.....	3 60	224 94	....Victoria.....
.....	794 13	8 97	5 00	13 26	821 36	..... *British Columbia*.... .....
.....	100 00	... ...	... .	....	100 00	....Chief Inspector. .. ..
200 00	....	..... .	.....	....	200 00	....General contingencies..... ...
....	248 15	....	. .. ..	.....	248 15	....General expenditure..... .....
....	321 74	.....	.....	.....	321 74	...Printing..... ....
....	495 00	... .. .	.....	.....	495 00	....Stationery.... ... .
... ...	90 00	. ....	.. ..	.....	90 00	....Lithographing .....
212 88	30,748 50	127 05	5 00	133 80	31,227 23	.....*Grand Totals*.....

INLAND REVENUE DEPARTMENT,
OTTAWA, JUNE 11, 1908.

SESSIONAL PAPER No. 12

ION 1907-1908.

ACCOUNT WITH EXPENDITURES. CR.

EXPENDITURES AUTHORIZED BY THE DEPARTMENT.						
Salaries.	Special Assistance.	Rent.	Travelling Expenses	Sundries.	Balances due by Inspectors, March 31, 1908.	Totals.
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
100 00						100 00
449 96		162 50				612 46
100 00			35 40	40 98		176 38
				14 90		14 90
100 00			25 95	29 35		155 30
100 00				36 90		136 90
200 00				35 46		235 46
3,249 96		120 00	288 60	427 92		4,086 48
400 00		40 50		76 44		516 94
100 00		78 00		12 40		190 40
1,833 25			200 90	110 95		2,145 10
			19 35	8 35		27 70
1,841 59	686 63			75 53		2,603 75
200 00		125 00				325 00
150 00				4 00		154 00
				5 45		5 45
200 00				13 50		213 50
4,052 84			10 80	573 69		4,637 33
100 00			3 75	17 50		121 25
13,177 60	686 63	526 00	584 75	1,483 32		16,458 30
4,168 76		240 00	73 30	175 43		4,657 49
1,400 00		150 00	11 15	173 93		1,735 08
249 96						249 96
100 00						100 00
5,918 72		390 00	84 45	349 36		6,742 53
100 00			88 10			188 10
1,100 00			74 75	9 20		1,183 95
1,200 00			162 85	9 20		1,372 05
1,363 79	250 00	403 67	253 42	117 74		2,388 62
					12 88	12 88
1,363 79	250 00	403 67	253 42	117 74	12 88	2,401 50
450 00				15 88		465 88
1,099 92	100 00		277 05	33 75		1,510 72
93 24						93 24
100 00						100 00
225 00			106 75	71 43		403 18
224 94						224 94
643 18			106 75	71 43		821 36
100 00						100 00
					200 00	200 00
				248 15		248 15
				321 74		321 74
				495 00		495 00
				90 00		90 00
23,953 21	1,036 63	1,319 67	1,469 27	3,235 57	212 88	31,227 23

W. J. GERALD,
Deputy Minister.

8-9 EDWARD VII., A. 1909

ELECTRIC LIGHT

DR. No. 23—INSPECTION DISTRICTS in

BALANCES DUE BY INSPECTORS APRIL 1, 1907.		Stamps issued to Inspectors	Registration Fees accrued.	Licenses to Export Electric Power Natural Gas, &c.	Penalties.	Totals.	DISTRICTS.
Stamps on hand.	Cash on hand.						
$ cts.	$ cts	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	
3,163 25	.....	450 00	600 00	.....	.....	4,213 25	....Belleville.....
2,266 50	.....	2,725 00	325 00	200 00	.....	5,516 50	...Hamilton.....
1,681 50	.....	2,700 00	627 50	.....	.....	5,009 00	....London.....
6,779 00	.....	1,500 00	430 00	.....	.....	8,709 00	....Ottawa .....
5,712 50	.....	9,000 00	1,035 00	.....	.....	15,747 50	..Toronto.....
19,602 75	.....	16,375 00	3,017 50	200 00	.....	39,195 25	*Ontario*.....
3,360 00	.....	6,600 00	210 00	.....	.....	10,170 00	...Montreal.....
2,420 75	.....	375 00	235 00	.....	.....	3,030 75	....Quebec.....
1,312 00	.....	125 00	235 00	.....	.....	1,672 00	....Sherbrooke.....
1,031 00	.....	450 00	188 75	.....	.....	1,669 75	....St. Hyacinthe.....
284 25	.....	987 50	80 00	.....	.....	1,351 75	....Three Rivers.....
8,408 00	.....	8,537 50	948 75	.....	.....	17,894 25	...*Quebec*.....
1,565 50	.....	1,700 00	255 00	25 00	.....	3,545 50	.....*St. John, N.B.*.....
2,380 00	.....	1,000 00	395 00	.....	.....	3,775 00	....*Halifax, N.S.*.....
262 25	.....	50 00	40 00	.....	.....	352 25	..... *Charlottetown, P.E.I.*
1,125 00	.....	5,037 50	430 00	.....	.....	6,592 50	.....*Winnipeg, Man*....
661 45	.....	325 00	140 00	.....	.....	1,126 45	.....*Calgary, Alta*.....
2,776 50	.....	2,750 00	305 00	.....	125 00	5,956 50	....Vancouver.....
1,256 50	.....	1,575 00	65 00	.....	.....	2,896 50	....Victoria.....
4,033 00	.....	4,325 00	370 00	.....	125 00	8,853 00	.....*British Columbia*...
1,350 00	.....	.....	35 00	.....	.....	1,385 00	...Dawson.....
						82,719 20	
.....	.....	.....	.....	.....	.....	15 00	Refunds, as per Statement No. 16 .....
39,387 95	.....	37,350 00	5,631 25	225 00	125 00	82,704 20	.....Grand totals. ...

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

SESSIONAL PAPER No. 12

INSPECTION, 1907–1908.

Account with Revenue. Cr.

Returned Damaged Stamps.	Deposited to the Credit of the Receiver General.			Balances Due by Inspectors March 31, 1908.		Totals.
	Licenses to export Electric Power, Natural Gas, &c.	Registration Fees.	Inspection Fees.	Stamps on hand.	Cash on hand.	
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
		600 00	1,298 00	2,315 25		4,213 25
	200 00	325 00	2,890 75	2,100 75		5,516 50
		627 50	2,239 00	2,142 50		5,009 00
		430 00	1,658 25	6,620 75		8,709 00
		1,035 00	7,727 00	6,985 50		15,747 50
	200 00	3,017 50	15,813 00	20,164 75		39,195 25
		210 00	7,521 25	2,438 75		10,170 00
		235 00	439 50	2,356 25		3,030 75
		235 00	282 75	1,154 25		1,672 00
		188 75	362 25	1,218 75		1,669 75
0 75		80 00	168 00	1,103 00		1,351 75
0 75		948 75	8,673 75	8,271 00		17,894 25
	25 00	255 00	1,481 25	1,784 25		3,545 50
		395 00	983 75	2,396 25		3,775 00
		40 00	89 50	222 75		352 25
		430 00	4,092 00	2,070 50		6,592 50
		140 00	327 45	595 75	63 25	1,126 45
		305 00	3,940 75	1,710 75		5,956 50
		65 00	1,198 75	1,632 75		2,896 50
		370 00	5,139 50	3,343 50		8,853 00
		35 00		1,350 00		1,385 00
		5,631 25				82,719 20
		15 00				15 00
0 75	225 00	5,616 25	36,600 20	40,198 75	63 25	82,704 20

W. J. GERALD,
Deputy Minister.

No. 24,—Inspection Districts in Account with Expenditures

Amounts received from Department to meet expenditures.	Guarantee.	Totals.	Districts.	Expenditures Authorized by the Department.					Totals.
				Salaries.	Special Assistance.	Rent.	Travelling Expenses.	Sundries.	
$ cts.	$ cts.	$ cts.		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
622 56	1 80	624 36	Belleville	150 00			389 31	85 05	624 36
162 65		162 65	Hamilton				161 20	1 45	162 65
352 88		352 88	London		13 33		319 05	20 50	352 88
198 05		198 05	Ottawa				198 05		198 05
2 00		2 00	Owen Sound					2 00	2 00
2,028 65		2,028 65	Toronto		1,127 65		840 25	60 75	2,028 65
81 55		81 55	Montreal				71 90	9 65	81 55
104 03		104 03	Quebec				30 89	73 14	104 03
59 80		59 80	Sherbrooke				55 65	4 15	59 80
430 70	1 80	432 50	St. Hyacinthe	300 00			124 35	8 15	432 50
501 76	1 65	503 41	Three Rivers	467 98			24 48	10 95	503 41
237 01		237 01	St. John				230 65	6 36	237 01
268 54		268 54	Halifax				262 33	6 21	268 54
76 30		76 30	Charlottetown				32 65	43 65	76 30
44 80		44 80	Victoria				18 50	26 30	44 80
271 05		271 05	Winnipeg		200 00		54 95	16 10	271 05
923 56	1 80	925 36	Calgary	400 00		210 00	204 50	110 86	925 36
496 40	3 60	500 00	Yukon	500 00					500 00
5,472 61		5,472 61	Chief Electrical Engineer	4,196 62	331 89		106 20	837 90	5,472 61
4,554 82		4,554 82	General Contingencies					4,554 82	4,554 82
90 24		90 24	Printing					90 24	90 24
369 99		369 99	Stationery					369 99	369 99
456 80		456 80	Export of Electrical Power					456 80	456 80
17,806 75	10 65	17,817 40	Totals	6,014 60	1,672 87	210 00	3,124 91	6,795 02	17,817 40

Inland Revenue Department,
Ottawa, June 11, 1908.

W. J. GERALD,
Deputy Minister.

No. 25.—STATEMENT showing the Amounts voted, and the Expenditures for each service, for the year ended March 31, 1908.

Services.	Grants.	Expenditures.	Over Expenditures.	Under Expenditures.
	$ cts.	$ cts.	$ cts.	$ cts.
Minister's salary	7,000 00	7,000 00		
Departmental salaries	50,927 50	47,667 68		3,259 82
" contingencies	7,000 00	6,909 57		90 43
Excise salaries	411,626 64	398,633 39		12,993 25
" contingencies	85,000 00	84,218 20		781 80
Duty pay	9,000 00	8,874 29		125 71
" other than special survey	1,100 00	1,075 00		25 00
Preventive service	13,000 00	11,416 60		1,583 40
Tobacco stamps	70,000 00	69,577 78		422 22
Commission to Customs officers	6,000 00	4,827 87		1,172 13
Tobacco stamps commission	100 00	1 31		98 69
L. A. Frèchette, translation	100 00	43 32		56 68
Provisional allowance	5,000 00	3,778 01		1,221 99
Methylated spirits	60,000 00	54,896 16		5,103 84
Weights and measures, salaries	63,700 00	61,858 35		1,841 65
" " contingencies	42,000 00	36,851 50		5,148 50
Gas and electric light salaries	30,500 00	29,967 81		532 19
" " contingencies	21,000 00	18,407 14		2,592 86
Adulteration of food	30,000 00	24,574 95		5, 425 05
Minor expenditure	500 00	51 47		448 53
Metric system	3,000 00	98 67		2,901 33
International Committee of Weights and Measures	2,500 00	2,233 86		266 14
Export of electric power	2,500 00	456 80		2,043 20
Totals	921,554 14	873,419 73		48,134 41

W. J. GERALD,
Deputy Minister.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

DR. No. 26.—STATEMENT showing the transactions in connection with the manufacture of Methylated Spirits for the year ended March 31, 1908. CR.

	Amounts.	Totals.		Amounts.	Totals.
	$ cts.	$ cts.		$ cts.	$ cts.
To Stock on hand April 1, 1907, viz.:		12,538 67	By cash received on account of Methylated Spirits, viz.:		54,509 23
Alcohol, 913·70 Proof Galls. at 10c.	91 37		Methylated Spirits, 102,233·98 Proof Galls. = 61,660·80 Std. Galls.:—		
" 4,263·55 " 25c.	1,065 89		570·38 Std. Galls. at 65c.	370 87	
Wood Naphtha, 9,098·71 Proof Galls = 5,431·94 Std. Galls., viz.:—			13,910·56 " 68c.	9,459 14	
87·50 Std. Galls. at 80c.	70 00		39,980·36 " 70c.	27,986 05	
5,344·44 " $1.29.	6,894 33		7,199·30 " 80c.	5,759 42	
Methylated Spirits 6,336·33 Proof Galls. = 3,825·78 Std. Galls., viz.			Barrels, 1,602 at $3, 597 at $4.	7,194 00	
2,481·13 Std. Galls. No. 1 at 70c.	1,736 86		Drums, 181 at $10, 160 at $12.	3,730 00	
1,010·60 " No. 2 at 80c.	808 48		Cans, 1 at $1, 2 at $3, 1 at $2·75.	9 75	
333·95 " Special at 70c.	233 74				
Barrels, 164 at $3.	492 00				
Drums, 65 at $12, 36 at $10, 4 at $4.	1,146 00		By Methylated Spirits sold and not paid up to March 31, 1908.		944 47
Amount to be refunded.		337 43	1,320·53 Proof Galls. = 798·21 Std. Galls., viz.:—		
			241·44 Std. Galls. at 68c.	164 18	
To Stock sold in 1906-07 and not paid until after March, 31, 1907.		1,360 84	391·25 " 70c.	273 87	
Methylated Spirits, 2,102·11 Proof Galls. = 1,268·69 Std. Galls., viz.:			165·52 " 80c.	132 42	
682·21 Std. Galls. at 68c.	464 24		Barrels, 7 at $4, drums, 5 at $10.	78 00	
505·77 " 70c.	354 03		" 74 returned and unpaid at $4.	296 00	
80·71 " 80c.	64 57				
Barrels, 19 at $3, drums, 4 at $10.	97 00		By stock bought, entered in warehouse, and not paid for until after March 31, 1908.		3,942 50
Barrels sold and not paid for until after March 31, 1907, 47 at $3.	141 00		Alcohol, 913·70 Proof Galls. at 10c.	91 37	
Drums sold and not paid for until after March 31, 1907, 20 at $12.	240 00		4,263·55 " 25c.	1,065 89	
			Wood Naphtha, 3,044 Proof Galls. = 1,796·31 Std. Galls. at $1.29.	2,317 24	
			Barrels, 76 at $3, drums, 20 at $12.	468 00	
To Disbursements for purchases, &c., viz.		46,460 76			
Alcohol, 24,965·67 Proof Galls. at 10c.	2,496 58		By Stock on hand, March 31, 1908.		10,922 65
68,016·89 " 25c.	17,004 23		Alcohol, 4,160·87 Proof Galls. at 25c.	1,040 22	
Wood Naptha, 20,891·89 Proof Galls. = 12,405·37 Std. Galls. at $1.29	16,002 97		2,319·58 " 10c.	231 96	
Barrels ½ at $2.50 (Fusil Oil).	2 50		Wood Naphtha, 4,646·15 Proof Galls. – 2,762·78 Std. Galls.		
" 1,644 at $3.	4,932 00		2,678·52 at $1.29.	3,455 29	
" 714 at $4.	2,856 00		84·26 at 80c.	67 41	

Drums, 191 at $10	1,910 00		Methylated Spirits, 10,059·85 Proof Galls=6,069·23 Std. Galls, viz.:—		
" 140 at $12	1,680 00		3,963·17 Std. Galls. No. 1 at 70c	2,774 22	
	46,884 28		1,419·04 " No. 2 at 80c	1,135 23	
Less amount refunded $337.43			395·17 " Special at 70c	276 62	
" freight and cartage 86.09	423 52		291·85 " No. 2 Violet at 65c	189 70	
	46,460 76		Barrels, 188 at $4	752 00	
		8,435 40	Drums, 30 at $12, 64 at $10	1,000 00	
To other expenses as follows			Barrels destroyed, 2.		
Rent	800 00		Used in manufacture—Alcohol, 86,502·11 Proof Galls.		
Salaries	4,599 84		Wood Naphtha, 22,300·45 Proof Galls.=13,278·22 Std. Galls.		
Retirement	100 04				
Special assistance	320 38				
Freight	1,540 60				
Stationery	18 29				
Printing	2 10				
Sundries, including rent of water power, fuel, &c.	1,054 15				
Manufactured during the year:— Methylated spirits, 105,175·92 Proof Galls=63,433·86 Std. Galls.					
Net profit		1,185 75			
Total		70,318 85	Total		70,318 85

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

W. J. GERALD,
Deputy Minister.

APPENDIX A

STATISTICS

No. 1.—Return of Manufactures for the Fiscal Year ended March 31, 1908.

Divisions.	Licenses.		Materials taken for use.					Total Grain.	Molasses.	Used in Spirits Manufactured.		Proof Spirits Manufactured.	Duty Collected ex-Manufactory on Deficiencies and Assessments		Total Duty Collected ex-Manufactory, including License Fees.
			Grain.												
	No.	Fees.	Malt.	Indian Corn.	Rye.	Oats.	Wheat.			Grain.	Molasses.				
		$ cts.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Galls.	Galls.	$ cts.	$ cts.
Belleville, Ont	1	250 00	222,041	2,140,384	72,975	.....	.....	2,435,400	.....	2,280,600	.....	131,731·31	1,538·51	2,923 17	3,173 17
Guelph "	1	250 00	640,780	8,179,800	975,140	82,990	667,610	10,546,320	.....	10,512,720	.....	633,987·34	47·72	90 67	340 67
Hamilton "	1	250 00	244,069	4,128,860	174,465	34,685	989,921	5,572,000	.....	5,572,000	.....	337,359·93	.....	.....	250 00
Perth "	2	500 00	179,449	.....	.....	.....	.....	179,449	.....	194,213	.....	10,879·43	8·60	16 51	516 51
Prescott "	1	250 00	180,258	3,555,032	548,174	19,228	117,680	4,420,372	.....	4,462,372	.....	279,343 78	.....	.....	250 00
Toronto "	2	500 00	1,786,820	21,275,580	4,589,690	200,200	.....	27,852,290	8,874,730	27,924,290	8,874,730	2,121,518·45	4,992·32	9,485 41	9,985 41
Windsor "	1	250 00	2,114,432	24,858,600	6,005,391	208,450	452,600	33,639,473	.....	33,945,731	.....	1,996,806·00	2,068·03	3,930 18	4,180 18
Totals.....	9	2,250 00	5,367,849	64,138,256	12,365,835	545,553	2,227,811	84,645,304	8,874,730	84,891,926	8,874,730	5,511,626·24	8,655·18	16,445 94	18,695 94
Joliette, Que..	1	250 00	1,575,625	1,452,924	1,679,275	.....	*126 11,100	4,719,050	.....	4,704,300	.....	232,419·56	.....	.....	250 00
Montreal "	1	250 00	.....	.....	.....	27,600	.....	27,600	8,338,072	27,600	8,338,072	516,164·48	.....	.....	250 60
Quebec "	1	250 00	500,580	4,406,990	595,905	9,025	.....	5,512,500	.....	5,181,560	.....	322,445·36	.....	.....	250 00
St. Hyacinthe	1	250 00	145,667	1,964,660	244,513	.....	26,780	2,381,620	.....	2,381,620	.....	144,044·20	.....	.....	250 00
Totals.....	4	1,000 00	2,221,872	7,824,574	2,519,693	36,625	*126 37,880	12,640,770	8,338,072	12,598,620	8,338,072	1,215,073·60	.....	.....	1,000 00
Vancouver, B.C.....	1	250 00	90,055	1,034,370	35,681	12,915	851,379	2,024,400	.....	2,009,200	.....	123,062·94	.....	.....	250 00
Grand Totals.	14	3,500 00	7,679,776	72,997,200	14,921,209	595,093	*126 3,117,070	99,310,474	17,212,802	99,499,146	17,212,802	6,849,762·78	8,655·18	16,445 94	19,945 94

*Starch.

Inland Revenue Department,
Ottawa, June 11th, 1908.

W. J. GERALD,
Deputy Minister.

APPENDIX A.—*Continued*—SPIRITS.

No. 2.—Comparative Statement of Manufactures for the Nine Months ended March 31, 1907, and the Fiscal Year ended March 31, 1908.

Provinces.	Licenses.		Materials taken for use.							Used in Spirits Manufactured.		Proof Spirits Manufactured.	Duty Collected ex-Manufactory, on Deficiencies and Assessments.		Total Duty Collected ex-Manufactory, including License Fees.
			Grain.					Total Grain.	Molasses.						
	No.	Fees.	Malt.	Indian Corn.	Rye.	Oats.	Wheat.			Grain.	Molasses.				
1907.		$	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Galls.	Galls.	$ cts.	$ cts.
Ontario	9	1,687 50	5,056,465	49,209,865	8,538,655	370,460	*13,104 2,135,690	65,324,239	12,639,175	63,672,417	12,639,175	4,339,758·16	4,366·66	8,296 65	9,984 15
Quebec	4	562 50	1,277,731	3,546,650	1,515,190	10,480	57,050	6,407,101	5,190,647	6,376,351	5,190,647	653,862·41	.....	.....	562 50
B. Columbia	1	187 50	53,150	.....	15,995	7,630	1,056,865	1,133,640	.....	1,081,640	.....	67,768·93	108·25	205 67	393 17
Totals	14	2,437 50	6,387,346	52,756,515	10,069,840	388,570	*13.104 3,249,605	72,864,980	17,829,822	71,130,408	17,829,822	5,061,389·50	4,474·91	8,502 32	10,939 82
1908.															
Ontario	9	2,250 00	5,367,849	64,138,256	12,365,835	545,553	2,227,811	84,645,304	8,874,730	84,891,926	8,874,730	5,511,626·24	8,655·18	16,445 94	18,695 94
Quebec	4	1,000 00	2,221,872	7,824,574	2,519,693	36,625	†126 37,880	12,640,770	8,338,072	12,598,020	8,338,072	1,215,073·60	.....	.....	1,000 00
B. Columbia	1	250 00	90,055	1,034,370	35,681	12,915	851,379	2,024,400	.....	2,009,200	.....	123,062·94	.....	.....	250 00
Totals	14	3,500 00	7,679,776	72,997,200	14,921,209	595,093	†126 3,117,070	99,310,474	17,212,802	99,499,146	17,212,802	6,849,762·78	8,655·18	16,445 94	19,945 94

* Barley. † Starch.

Inland Revenue Department,
Ottawa, June 11, 1908.

W. J. GERALD,
Deputy Minister.

APPENDIX A.—*Continued*—SPIRITS.

No. 3.—Statement showing the transactions in the Distilleries in the

Divisions.	In Process, including Deficiencies, brought forward.	Manufactured, including surpluses.	Returned to Distillery for Redistillation.		Received from other sources. Duty Paid.
			Duty Paid.	In Bond.	
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.
Belleville, Ont	51,859·84	131,731·31	.....	.....	3,863·21
Guelph "	35,418·88	633,987·34	.....	41,797·87	1,338·81
Hamilton "	26,853·87	337,359·93	.....	75,684·44	528·72
Perth "	321·22	10,879·43	.....	.....	.....
Prescott "	14,791·20	279,343·78	.....	.....	1,143·10
Toronto "	51,573·86	2,121,518·45	462·92	914,599·54	962·82
Windsor "	90,165·48	1,996,806·00	.....	400,125·51	894·41
Totals	270,984·35	5,511,626·24	462·92	1,432,207·36	8,731·07
Joliette, Que	10,528·85	232,419·56	.....	.....	14·85
Montreal "	21,199·64	516,164·48	.....	.....	.....
Quebec "	5,885·68	322,445·36	.....	.....	.....
St. Hyacinthe, Que	19,786·18	144,044·20	.....	1,296·29	97·35
Totals	57,400 35	1,215,073·60	.....	1,296·29	112·20
Vancouver, B.C.	12,374·88	123,062·94	.....	29·75	2,960·12
Grand Totals	340,759·58	6,849,762·78	462·92	1,433,533·40	11,803·39

Inland Revenue Department,
Ottawa, June 11, 1908.

Dominion of Canada during the Fiscal Year ended March 31, 1908.

Totals.	Warehoused.	Fusel Oil written off.	Written off.	Deficiencies on which duty was collected.	In Process, including Deficiencies, carried forward.	Totals.
Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.
187,454·36	152,811·77	1,110·02	10,487·06	1,538·51	21,507·00	187,454·36
712,542·90	683,047·77	1,177·02	... ...	47·72	28,270·39	712,542·90
440,426·96	324,626·41	210·46	....	....	115,590·09	440,426·96
11,200·65	11,045·93	.....	.....	8·60	146·12	11,200·65
295,278·08	278,139·53	962·87	.....	.....	16,175·68	295,278·08
3,089,117·59	2,978,875·59	4,412·69	.....	4,992·32	100,836·99	3,089,117·59
2,487,991·40	2,435,148·96	569·21	.....	2,068·03	50,205·20	2,487,991·40
7,224,011·94	6,863,695·96	8,442·27	10,487·06	8,655·18	332,731·47	7,224,011·94
242,963·26	229,543·29	.....	.....	.....	13,419·97	242,963·26
537,364·12	520,207·79	4,067·31	....	....	13,089·02	537,364·12
328,331·04	305,635·07	936·50	.....	....	21,759·47	328,331·04
165,224·02	146,959 99	.....	....	.. ..	18,264·03	165,224·02
1,273,882·44	1,202,346·14	5,003·81	. .. .	....	66,532·49	1,273,882·44
138,427·69	120,723·39	108·48	..... .	.....	17,595·82	138,427 69
8,636,322·07	8,186,765·49	13,554·56	10,487·06	8,655·18	416,859·78	8,636,322·07

W. J. GERALD,
Deputy Minister.

APPENDIX A.—*Continued*—SPIRITS.

DR. No. 4.—WAREHOUSE RETURN

Remaining in Warehouse from last year.	Warehoused	Imported.	Received from other Divisions.	Totals.	DIVISIONS.	Entered for Consumption.	
Galls.	Galls.	Galls.	Galls,	Galls.		Galls.	$ cts.
733,182·18	152,811·77	....	15,075·35	901,069·30	Belleville, Ont.	61,487·89	116,826 92
6,104·04	.....	.....	27,931·77	34,035·81	Brantford, "	23,565·86	44,775 59
438·97	....	....	3,122·86	3,561·83	Cornwall, "	3,383·86	6,430 08
1,269,370·42	683,047·77	....	52,125·35	1,995,543·54	Guelph, "	219,485·64	415,941 72
823,351·48	324,626·41	....	121,404·16	1,269,382·05	Hamilton, "	156,523·57	296,771 80
5,965·41	.....	.....	49,511·26	55,476·67	Kingston "	40,780·48	77,484 92
5,550·77	....	.....	40,537·78	46,088·55	London "	39,761·65	75,549 49
33,457·07	.....	.....	179,409·76	212,866·83	Ottawa. "	173,480·88	329,804 03
6,378·62	..... .	.....	86,603·94	92,982·56	"Govt. Wse. "	.. ..	....
.....	.....	.....	77·16	77·10	"Dept. Lab. "	... .	... .
103,072·46	11,045·93	.....	59,791·18	173,909·57	Perth, "	68,814·92	130,512 86
6,733·09	.....	.....	27,204·19	33,937·28	Peterboro', "	25,022·36	47,548 80
6,960·53	....	.....	53,762·47	60,723·00	Port Arthur, "	48,342·43	91,883 24
1,134,767·92	278,139 53	269,658 05	1,801·72	1,684,367·22	Prescott, "	40,183·85	157,488 20
785·20	.....	.....	7,707·06	8,492·26	St. Cath'ines, "	6,823·02	12 963 90
1,360·93	.....	.....	17,589·72	18,950·65	Stratford, "	17,931·53	34,073 26
4,998,946·19	2,978,875·59	....	212,189·10	8,190,010·88	Toronto, "	498,207·93	939,857 45
6,607,332·60	2,435,148·96	....	55,410·45	9,097,892·01	Windsor, "	226,398·08	427,507 23
15,734,757·88	6,863,695·96	269,658 05	1,011,255·22	23,879,367·11	..Totals. ...	1,650,193·95	3,205,419 49
515,048·52	229,543·29	.....	15,109·41	759,701·22	Joliette, Que.	21,067·38	40,137 29
1,107,277·36	520,207·79	.....	805,958·50	2,433,443·65	Montreal, "	1,022,398·17	1,927,132 20
77,043·87	305,635·07	.....	232,675·44	615,354·38	Quebec, "	223,940·78	425,753 24
311,479·06	146,959·99	.. ..	69,439·65	527,878·70	St. Hya'nthe "	85,772·11	163,090 93
8,647·69	....	55,357 19	94,232·46	158,237·34	Sherbrooke, "	86,657·21	182,244 05
4,796·19	.....	....	34,890·64	39,686·83	Three Rivers "	36,166·61	68,778 18
2,024,292·69	1,202,346·14	55,357 19	1,252,306·10	4,534,302·12	..Totals.....	1,476,002·26	2,807,135 89
15,947·84	... .	.....	98,950·08	114,897·92	St. John, N.B..	88,463·31	168,089 78
6,516·55	.....	....	33,686·79	40,203·34	Halifax, N.S..	29,648·37	56,355 03
739·07	.....	.....	4,990·36	5,729·43	Pictou, " ..	5,507·74	10,470 01
7,255·62	.....	.....	38,677·15	45,932·77	..Totals.....	35,156·11	66,825 04
88,130·60	....	.....	375,422·85	463,552·85	Winnipeg, Man	346,045·14	657,170 37
.....	.....	.....	46,862·36	46,862·36	Moose Jaw, Sk.	36,685·17	69,745 74
23,906·74	.....	....	95,628·16	118,934·90	Calgary, Alta..	94,462·07	179,495 40
287,977·37	120,723·39	....	85,181·51	493,882·27	Vancouver, B.C	119,040·71	226,190 07
20,106·43	....	.....	75,592·59	95,699·02	Victoria, "	68,599·08	130,342 56
308,083·80	120,723·39	....	160,774·10	589,581·29	..Totals.....	187,639·79	356,532 63
2,564·16	... .	.....	4,833·07	7,397·23	Dawson, Y.T..	4,009·52	7,618 64
8,612·54	.....	.....	.....	8,612·54	Sundries.....	.....	.....
18,213,551·27	8,186,765·49	325,015 24	3,084,109·09	29,809,441·09	.Grand Totals..	3,918,657·32	7,518,032 98 †

† This amount includes $97,504.62 collected on Imported Spirits used in bonded factories, at 30c. per gallon.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

for the Fiscal Year ended March 31, 1908. CR.

Removed in Bond to Other Divisions.		Removed in Bond to Distillery for Redistillation.	Free.		Exported.	Used in Bonded Factories.	Remaining in Warehouse.	Totals.
Warehoused in Divisions to which Removed.	In Transit.		Legal Allowance.	Other.				
Galls.	Galls.	Galls.	Galls.	Galls.	Galls.	Galls.	Galls.	Galls.
219,166·85	4,353·02	.....	4,313·24	3,278·15	2,241·30	.....	606,228·85	901,069·30
.....	.....	.....	.....	.....	.....	5,715·94	4,754·01	34,035·81
.....	.....	.....	.....	.....	.....	.....	177·97	3,561·83
60,236·88	4,781·23	41,797·87	25,835·30	1,685·68	38,921·29	.....	1,602,799 65	1,995,543·54
114,185·72	407·85	75,684·44	10,237·45	911·73	1,634·07	21,482·59	888,314·63	1,269,382·05
.....	.....	.....	.....	.....	95·81	9,846·69	4,753·69	55,476·67
.....	.....	.....	.....	.....	11·54	.....	6,315·36	46,088·55
125·68	.....	.....	.....	192·60	.....	6,458·19	32,609·48	212,866·83
.....	.....	.....	.....	.....	.....	*86,502·11	6,480·45	92,982·56
.....	.....	.....	.....	77·10	.....	.....	.....	77·10
3,134·67	.....	.....	481 62	.....	.....	.....	101,475 36	173,909·57
.....	.....	.....	.....	.....	.....	.....	8,914·92	33,937·28
.....	.....	.....	.....	.....	.....	.....	12,380·57	60,723·00
268,933·36	851·98	.....	5,431·55	1,221·40	923·33	269,549·82	1,097,271·93	1,684,367·22
.....	.....	.....	.....	.....	.....	.....	1,669·24	8,492·26
.....	.....	.....	.....	.....	.....	.....	1,019·12	18,950·65
947,656·57	20,119·35	914,599·54	27,620·48	673 57	7,915·35	118,039·22	5,655,178·87	8,190,010·88
780,034·02	17,843·67	400,125·51	65,069·40	1,593·86	352,166·77	.....	7,254,660·70	9,097,892·01
2,393,473·75	48,357·10	1,432,207 36	138,992·04	9,631·09	403,909·46	*86,502·11 431,092·45	17,285,004·80	23,879,367·11
183,641·66	2,686·50	.....	824·72	.....	.....	.....	551,480·96	759,701·22
334,887·30	5,404·52	.....	3,868 80	.....	1,034·87	42,084·80	1,023,765·19	2,433,443·65
4,158·43	.....	.....	.....	1 57	.....	25,204·70	362,048·90	615,354·38
95,436·70	5,280·75	1,296·29	696·43	97·35	.....	19,912·44	319,386·63	527,878·70
94·88	.....	.....	.....	.....	.....	61,720·03	9,765·22	158,237·34
77·22	.....	.....	.....	.....	.....	.....	3,443·00	39,686·83
618,296 19	13,371·77	1,296·29	5,389·95	98·92	1,034·87	148,921·97	2,269,889·90	4,534,302·12
.....	.....	.....	.....	.....	14·01	14,103·09	12,317·51	114,897·92
4,990 36	130·18	.....	.....	.....	70·20	.....	5,364·23	40,203 34
.....	.....	.....	.....	.....	.....	.....	221·69	5,729·43
4,990·36	130 18	.....	.....	.....	70·20	.....	5,585·92	45,932·77
32,874·43	38·03	.....	.....	.....	75·00	38,783·88	45,736 37	463,552·85
.....	.....	.....	.....	.....	.....	.....	10,177·19	46,862·36
1,124·75	.....	.....	.....	.....	.....	.....	23,348·08	118,934·90
31,955·56	705·48	29·75	2,589·29	2,692·50	271·11	5,638·00	330,959·87	493,882·27
1,394·05	21·68	.....	.....	72 37	7,484·27	.....	18,127·57	95,699·02
33,349·61	727·16	29·75	2,589·29	2,764·87	7,755,38	5,638·00	349,087·44	589,581·29
.....	.....	.....	.....	.....	.....	.....	3,387·71	7,397·23
.....	.....	.....	.....	.....	.....	.....	8,612·54	8,612·54
3,084,109·09	62,624·24	1,433,533 40	146,971·28	12,497·88	412,858·92	*86,502·11 38,539 39	20,013,147·46	29,809,441·09

* Used in the manufacture of Methylated Spirits at the Government Warehouse, Ottawa.

W. J. GERALD,
Deputy Minister.

APPENDIX A.—*Continued*—SPIRITS.

DR. No. 5.—COMPARATIVE STATEMENT of Warehouse Returns for the Nine

Remaining in Warehouse from last year.	Warehoused.	Imported.	Received from other Divisions.	Totals.	PROVINCES.	Entered for Consumption.	
Galls.	Galls.	Galls.	Galls.	Galls.	1907.	Galls.	$ cts.
14,702,153·79	5,223,831·44	143,745·07	779,785·00	20,849,515·30	..Ontario.....	1,296,492·91	2,495,698 55
1,974,810·40	630,910·00	* 25·80 13,579·78	1,038,068·14	3,657,394·12	..Quebec.....	1,121,068·43	2,130,935 70
17,321·93	.....	.....	76,646·92	93,968·85	..N. Brunswick.	68,303·67	129,790 77
7,191·13	....	.. ....	33,709·76	40,900·89	..Nova Scotia ..	28,439·51	54,068 01
68,368·25	.....	.....	363,448·06	431,816·31	..Manitoba	320,830·88	609,591 79
14,246·35	.....	.....	69,430·46	83,676·81	..Alberta.....	59,770·07	113,580 73
238 047·13	65,781·10	.. ..	154,105·16	457,933·39	..Br. Columbia..	135,065·14	256,635 78
3,668·15	.....	.. ..	2,440·20	6,108·35	..Yukon	3,468·84	6,590 83
8,612·54	....	.....	....	8,612·54	..Sundries.....	... .	.....
17,034,419·67	5,920,522·54	* 25·86 157,324·85	2,517,633·70	25,629,926·56	....Totals.. ...	3,033,439·45	5,796,802 16
					1908.		
15,734,757·88	6,863,695·96	269,658·05	1,011,255·22	23,879,367·11	..Ontario.....	1,650,193·95	3,205,419 49
2,024,292·69	1,202,346·14	55,357·19	1,252,306·10	4,534,302·12	..Quebec.....	1,476,002·26	2,807,135 89
15,947·84	.....	... .	98,950·08	114,897·92	..N. Brunswick.	88,463·31	168,089 78
7,255·62	.....	.....	38,677·15	45,932 77	..Nova Scotia ..	35,156·11	66,825 04
88,130·00	....	.....	375,422·85	463,552·85	..Manitoba	346,045·14	657,170 37
.....	..... .	....	46,862·36	46,862·36	..Saskatchewan.	36,685·17	69,745 74
23,906·74	.....	....	95,028·16	118,934·90	..Alberta.....	94,462·07	179,495 40
308,083·80	120,723·39	.....	160,774·10	589,581·29	..Br. Columbia..	187,639·79	356,532 63
2,564·16	....	.....	4,833·07	7,397·23	..Yukon	4,009·52	7,618 64
8,612 54	....	....	.....	8,612·54	..Sundries.. ...	.....	... .
18,213,551·27	8,186,765·49	325,015·24	3,084,109·69	29,809,441·09	..Totals.....	3,918,657·32	7,518,032 98

‡Seizure.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

Months ended March 31, 1907, and the Fiscal Year ended March 31, 1908. Cr.

Removed in Bond to Other Divisions		Removed in bond to Distillery for Redistillation.	Free.		Exported.	Used in Bonded Factories.	Remaining in Warehouse.	Totals.
Warehoused in Divisions to which removed.	In transit.		Legal Allowance	Other.				
Galls.	Galls.	Galls.	Galls.	Galls.	Galls.	Galls.	Galls.	Galls.
2,077,372·65	.....	1,007,087·92	109,101·34	9,538·45	298,727·76	*56,854·81 259,581·58	15,734,757·88	20,849,515·30
417,974·26	.....	....	5,066·61	1,536·56	374·21	87,141·36	2,024,292·69	3,657,394·12
236·69	.. ..	... .	.....	.....	55·83	9,424·82	15,947·84	93,968·85
5,027·90	....	....	.....	.....	177·86	.....	7,255·62	40,900·89
11,970·51	.....	.....	.....	.....	40·44	10,844·48	88,130·00	431,816·51
.....	.....	.....	.....	.....	.....	.....	23,906·74	83,676·81
5,051·69	.....	47·68	487·74	.....	4,142·07	5,055·27	308,083·80	457,933·39
... .	....	.....	.....	.....	75·35	.....	2,564·16	6,108·35
.....	.....	.....	.....	.....	... .	... .	8,612·54	8,612·54
2,517,633·70	.....	1,007,135·60	114,595·69	11,075·01	303,593·52	*56,854·81 372,047·51	18,213,551·27	25,629,926·56
2,393,473·75	48,357·10	1,432,207·36	138,992·04	9,634·09	403,909·46	*86,502·11 431,092·45	17,285,004·80	23,879,367·11
618,296·19	13,371·77	1,296·29	5,389·95	98.92	1,034·87	148,921·97	2,269,889·90	4,534,302·12
.....	... ...	. . ..	.....	.....	14·01	14,103·09	12,317·51	114,897·92
4,990·36	130·18	.....	.....	.....	70·20	....	5,585·92	45,932·77
32,874·43	38·03	.....	....	.....	75·00	38,783·88	45,736·37	463,552·85
....	.....	.....	.....	.....	.....	....	10,177·19	46,862·36
1,124·75	.. ..	....	....	.....	.....	.....	23,348·68	118,934·90
33,349·61	727·16	29·75	2,589·29	2,764·87	7,755·38	5,638·00	349,087·44	589,581·29
....	.....	.....	.....	... .	....	....	3,387·71	7,397·23
....	.. ..	.. ..	.....	.....	.. ..	. .....	8,612·54	8,612·54
3,084,109·09	62,624·24	1,433,533·40	146,971·28	12,497·88	412,858·92	*86,502·11 638,539·39	20,013,147·46	29,809,441·09

*Used in the manufacture of Methylated Spirits at the Government Warehouse, Ottawa.

	1907.	1908.
Total duty collected ex-manufactory and ex-warehouse....	$ 5,805,304 48	$ 7,534,478 92
License fees.....	2,437 50	3,500 00
	$ 5,807,741 98	$ 7,537,978 92

W. J. GERALD,
Deputy Minister.

APPENDIX A.—*Continued*—MALT.

No. 6.—RETURN of Manufactures for the Fiscal Year ended March 31, 1908.

DIVISIONS.	LICENSES.		Grain Steeped.	Grain used in Malt Manufactured.	MALT.		Total Duty Collected ex-manufactory, including License Fees.
	No.	Fees.			Manufactured.	Warehoused.	
		$ cts.	Lbs.	Lbs.	Lbs.	Lbs.	$ cts.
Belleville, Ont...	1	50 00	274,007	291,867	226,170	226,170	50 00
Brantford " ...	1	50 00	592,326	593,307	473,776	473,776	50 00
Guelph " ...	5	600 00	6,806,404	6,817,458	5,457,357	5,457,357	600 00
Hamilton " ...	2	350 00	6,205,370	6,166,120	4,958,560	4,958,560	350 00
Kingston " ...	1	50 00	376,052	370,496	292,536	292,536	50 00
London " ...	3	450 00	6,256,091	6,255,075	4,899,508	4,899,508	450 00
Ottawa " ...	1	100 00	.....	39,140	31,490	31,490	100 00
Owen Sound Ont..	1	200 00	6,044,460	5,852,460	4,569,850	4,569,850	200 00
Perth " ..	2	100 00	133,475	154,075	124,383	124,383	100 00
Peterborough " ..	2	250 00	2,161,421	2,021,981	1,575,139	1,575,139	250 00
Prescott " ..	3	200 00	1,532,869	1,527,668	1,182,614	1,182,614	200 00
St. Catharines " ..	1	50 00	722,930	722,605	574,650	574,650	50 00
Stratford " ..	1	200 00	7,905,800	7,899,800	6,287,630	6,287,630	200 00
Toronto " ..	10	1,400 00	19,476,338	19,579,842	15,371,241	15,371,241	1,400 00
Windsor " ..	1	200 00	5,597,140	5,625,700	4,577,660	4,577,660	200 00
Totals.....	35	4,250 00	64,084,683	63,917,594	50,602,564	50,602,564	4,250 00
Montreal, Que.....	4	800 00	36,411,300	36,633,500	29,349,790	29,349,790	800 00
Quebec "	1	150 00	585,150	685,709	540,512	540,512	150 00
Totals..... ...	5	950 00	36,996,450	37,319,209	29,890,302	29,890,302	950 00
Halifax, N.S.	1	150 00	638,675	638,531	504,870	504,870	150 00
Winnipeg, Man....	3	550 00	15,802,361	15,917,041	12,952,940	12,952,940	550 00
Calgary, Alta.....	4	400 00	5,531,779	5,759,416	4,693,094	4,693,094	400 00
Victoria, B.C	1	50 00	1,187,008	1,177,078	934,050	934,050	50 00
Grand Totals..	49	6,350 00	124,240,956	124,728,869	99,577,820	99,577,820	6,350 00

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

W. J. GERALD,
Deputy Minister.

SESSIONAL PAPER No. 12

APPENDIX A—*Continued*—MALT.

No. 7.—COMPARATIVE STATEMENT of Manufactures for the Nine Months ended March 31, 1907, and the Fiscal Year ended March 31, 1908.

PROVINCES.	LICENSES.		Grain Steeped.	Grain used in Malt Manufactured.	MALT.		Total Duty collected ex Manufactory, including License Fees.
	No.	Fees.			Manufactured.	Warehoused.	
1907.		$ cts.	Lbs.	Lbs.	Lbs.	Lbs.	$ cts.
Ontario	37	3,300 00	52,891,173	49,469,662	39,111,020	39,111,020	3,300 00
Quebec	5	712 50	33,540,035	32,385,076	25,833,512	25,833,512	712 50
Nova Scotia	1	112 50	542,801	487,784	389,026	389,026	112 50
Manitoba	3	412 50	13,916,956	13,345,796	10,832,508	10,832,508	412 50
Alberta	4	300 00	3,964,325	3,707,155	3,005,638	3,005,638	300 00
British Columbia	1	37 50	649,648	650,615	510,807	510,807	37 50
Totals	51	4,875 00	105,504,938	100,046,088	79,682,511	79,682,511	4,875 00
1908.							
Ontario	35	4,250 00	64,084,683	63,917,594	50,602,564	50,602,564	4,250 00
Quebec	5	950 00	36,996,450	37,3.9,209	29,890,302	29,890,302	950 00
Nova Scotia	1	150 00	638,675	638,531	504,870	504,870	150 00
Manitoba	3	550 00	15,802,361	15,917,041	12,952,940	12,952,940	550 00
Alberta	4	400 00	5,531,779	5,759,416	4,693,094	4,693,094	400 00
British Columbia	1	50 00	1,187,008	1,177,078	934,050	934,050	50 00
Totals	49	6,350 00	124,240,956	124,728,869	99,577,820	99,577,820	6,350 00

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

W. J. GERALD,
Deputy Minister.

APPENDIX A—*Continued*—MALT.

DR. No. 8.—WAREHOUSE RETURN for

Remaining in Warehouse from last year.	Warehoused	Increases.	Received from other Divisions.	Imported	Totals.	DIVISIONS.
Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	
144,023	226,170	5,742	316,000		691,935	Belleville Ont.
183,154	473,776	6,730	346,800	7,000	1,017,460	Brantford "
3,204,578	5,457,357	64,960	2,236,800		10,963,695	Guelph "
1,433,785	4,958,560	33,015	360,000		6,785,360	Hamilton "
241,986	292,536	2,678	210,000		747,200	Kingston "
2,641,940	4,899,508	53,541	272,000	1,333	7,868,322	London "
347,652	31,490	10,526	647,214		1,036,882	Ottawa "
1,392,092	4,569,850	16,860	645,900		6,624,702	Owen Sound "
146,677	124,383	969	760,000	2,073	1,034,102	Perth "
771,512	1,575,139	36,616	407,000		2,790,267	Peterborough "
40,000			360,000		400,000	Port Arthur "
596,086	1,182,614	14,064			1,792,764	Prescott "
143,080	574,650	2,750	842,200		1,562,680	St. Catharines "
1,973,448	6,287,630	24,898	107,000		8,392,976	Stratford "
8,963,014	15,371,241	213,009	4,538,000	27,000	29,112,264	Toronto "
1,765,525	4,577,660	32,955	860,000	1,785	7,237,925	Windsor "
23,988,552	50,602,564	519,313	12,908,914	39,191	88,058,534	Totals.
46,848		9,143	1,552,000		1,607,991	Joliette, Que.
11,719,204	29,349,790	117,888	607,000		41,793,882	Montreal, "
40,000	540,512		4,402,0 0		4,982,512	Quebec, "
			155,000		155,000	St. Hyacinthe, "
69,706			1,200,000		1,269,700	Sherb ooke "
11,875,752	29,890,302	127,031	7,916,000		49,809,085	Totals.
120,000			1,690,000		1,810,000	St. John, N.B.
239,110	504,870	1,712	1,957,250		2,702,942	Halifax, N.S.
3,772,962	12,952,940	45,798	310,000	53,560	17,135,260	Winnipeg, Man,
			410,000	2,860	412,860	Moose Jaw, Sask.
1,637,144	4,693,094	49,741	361,520	98,959	6,840,458	Calgary, Alta.
382,832			3,910,074	97,316	4,390,222	Vancouver, B.C.
40,000	934,050		1,120,000	135,947	2,229,997	Victoria, B.C.
422,832	934,050		5,030,074	233,263	6,620,219	Totals.
72,163			120,000	44,600	236,763	Dawson, Y.T.
42,128,515	99,577,820	743,595	30,703,758	472,433	173,626,121	Grand Totals.

INLAND REVENUE DEPARTMENT,
OTTAWA, JUNE 11, 1908.

the Fiscal Year ended March 31, 1908. CR.

Entered for Consumption at 1½ cents per lb.		Removed in bond to other Divisions.		Exported.	Free.	Written off.	Remaining in Warehouse.	Totals.
		Warehoused in Divisions to which Removed.	In Transit.					
Lbs.	$ cts.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
502,399	7,535 98	40,000					149,536	691,935
876,804	13,222 06						140,656	1,017,460
6,939,173	104,687 60	895,214					3,129,308	10,963,695
4,691,330	70,369 95	230,400					1,863,630	6,785,360
512,492	7,687 38						234,708	747,200
5,110,730	76,661 63						2,757,592	7,868,322
1,024,294	15,364 41						12,588	1,036,882
1,138,000	17,070 00	4,050,200	80,000	60,000			1,296,502	6,624,702
842,073	12,631 09				179,449	7,957	4,623	1,034,102
1,338,436	20,076 54	591,250	58,320				802,2 1	2,790,267
362,260	5,433 90						37,740	400,000
1,251,931	18,778 97						540,833	1,792,764
1,280,430	19,206 45						282,250	1,562,680
474,080	7,111 20	5,543,100	74,000				2,301,796	8,392,976
19,498,492	292,747 3	1,096,000	40,000			33,160	8,444,612	29,112,264
3,897,285	58,459 28				579,990		2,760,650	7,237,925
49,740,209	746,443 83	12,446,164	252,320	60,000	759,439	41,117	24,759,285	88,058,534
					1,575,625		32,366	1,607,991
20,221,832	303,327 48	11,084,000	299,000	295,200		96,000	9,797,850	41,793,882
4,942,512	74,137 60						40,000	4,982,512
155,000	2,325 00							155,000
1,258,700	18,880 50						11,000	1,269,700
26,578,044	398,670 58	11,084,000	299,000	295,200	1,575,625	96,000	9,881,216	49,809,085
1,810,000	27,150 00							1,810,000
2,609,162	39,137 43						93,780	2,702,942
6,289,346	94,340 19	7,093,594	220,000				3,532,320	17,135,260
373,853	5,607 80						39,007	412,860
4,685,541	70,283 18	80,000					2,074,917	6,840,458
4,155,998	62,339 98						234,224	4,390,222
2,172,281	32,584 10						57,716	2,229,997
6,328,279	94,924 08						291,940	6,620,219
165,299	2,479 48						71,464	236,763
98,579,733	1,479,036 57	30,703,758	771,320	355,200	2,335,064	137,117	40,743,929	173,626,121

W. J. GERALD,
Deputy Minister.

APPENDIX A—*Continued*—MALT.

DR. No. 9.—COMPARATIVE STATEMENT of Warehouse Returns for the

Remaining in Warehouse from last year.	Warehoused	Increases.	Received from other Divisions.	Imported.	Totals.	Provinces.
Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	1907.
21,196,241	39,111,020	508,373	8,009,553	31,064	68,856,251	Ontario
9,650,588	25,833,512	153,129	5,240,351	7,400	40,884,980	Quebec
80,000			1,200,000		1,280,000	New Brunswick
42,942	389,026	1,534	2,058,800		2,492,302	Nova Scotia
807,682	10,832,508	4,561	214,000	95,959	11,954,710	Manitoba
469,402	3,005,638	6,425	878,000	59,865	4,419,330	Alberta
314,374	510,807		2,394,180	777,891	3,997,252	British Columbia
57,434				84,136	141,570	Yukon Territory
32,618,663	79,682,511	674,022	19,994,884	1,056,315	134,026,395	Totals
						1908.
23,988,552	50,602,564	519,313	12,908,914	39,191	88,058,534	Ontario
11,875,752	29,890,302	127,031	7,916,000		49,809,085	Quebec
120,000			1,690,000		1,810,000	New Brunswick
229,110	504,870	1,712	1,957,250		2,702,942	Nova Scotia
3,772,962	12,952,940	45,798	310,000	53,560	17,135,260	Manitoba
			410,000	2,860	412,860	Saskatchewan
1,637,144	4,693,094	49,741	361,520	98,959	6,840,458	Alberta
422,832	934,050		5,030,074	233,263	6,620,219	British Columbia
72,163			120,000	44,600	236,763	Yukon Territory
42,128,515	99,577,820	743,595	30,703,758	472,433	173,626,121	Totals

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

Nine Months ended March 31, 1907 and the Fiscal Year ended March 31, 1908. Cr.

Entered for Consumption at 1½ cents per lb.		Removed in Bond to other Divisions.		Exported.	Free.	Written off.	Remaining in Warehouse.	Totals.
		Warehoused in Divisions to which Removed.	In Transit.					
Lbs.	$ cts.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
35,678,625	535,458 93	7,654,454	.....	172,800	1,347,359	14,461	23,988,552	68,856,251
19,027,003	285,478 94	8,808,250	.....	130,750	1,043,225	.....	11,875,752	40,884,980
1,169,000	17,400 00	.....	.....	.....	.....	.....	120,000	1,280,000
2,253,192	33,797 88	.....	.....	.....	.....	.....	239,110	2,492,302
4,655,748	69,836 22	3,526,000	.....	.....	.....	.....	3,772,962	11,954,710
2,758,476	41,377 20	6,180	.....	.....	.....	17,530	1,637,144	4,419,330
3,574,420	53,616 23	.....	.....	.....	.....	.....	422,832	3,997,252
69,407	1,041 19	.....	.....	.....	.....	.....	72,163	141,570
69,176,871	1,038,006 59	19,994,884	.....	303,550	2,390,584	31,991	42,128,515	134,026,395
49,740,209	746,443 83	12,446,164	252,320	60,000	759,439	41,117	24,759,285	88,058,534
26,578,044	398,670 58	11,084,000	299,000	295,200	1,575,625	96,000	9,881,216	49,809,085
1,810,000	27,150 00	.....	.....	.....	.....	.....	.....	1,810,000
2,609,162	39,137 43	.....	.....	.....	.....	.....	93,780	2,702,942
6,289,346	94,340 19	7,093,594	220,000	.....	.....	.....	3,532,320	17,135,260
373,853	5,607 80	.....	.....	.....	.....	.....	39,007	412,860
4,685,541	70,283 18	80,000	.....	.....	.....	.....	2,074,917	6,840,458
6,328,279	94,924 08	.....	.....	.....	.....	.....	291,940	6,620,219
165,299	2,479 48	.....	.....	.....	.....	.....	71,464	236,763
98,579,733	1,479,036 57	30,703,758	771,320	355,200	2,335,064	137,117	40,743,929	173,626,121

	1907.	1908.
Total duty collected ex-manufactory and ex-warehouse	$1,038,006 59	$1,479,036 57
License fees	4,875 00	6,350 00
	$1,042,881 59	$1,485,386 57

W. J. GERALD,
Deputy Minister.

APPENDIX A—*Continued*—MALT LIQUOR.

No. 10.—RETURN of Manufactures for the Fiscal Year ended March 31, 1908.

DIVISIONS.	LICENSES. No.	LICENSES. Fees.	Malt used	Other commodities used.	Malt Liquor manufactured.	Malt Liquor exported, and used by H.M. Army and Navy.	Total Duty collected, including License Fees.
		$ cts.	Lbs.	Lbs.	Galls.	Galls.	$ cts.
Belleville, Ont.	1	50 00	223,981	.....	106,491	.....	50 00
Brantford "	3	150 00	873,793	.....	368,345	.....	150 00
Guelph "	8	400 00	6,218,701	.....	2,813,995	.....	400 00
Hamilton "	2	100 00	4,339,400	.....	2,160,630	.....	100 00
Kingston "	2	100 00	518,481	.....	175,925	.....	100 00
London "	6	300 00	5,388,589	.....	2,163,753	1,987	300 00
Ottawa "	3	150 00	1,652,746	.....	670,275	.....	150 00
Owen Sound "	5	250 00	887,658	.....	369,770	.....	250 00
Perth "	2	75 00	786,666	4,368	308,178	.....	385 80
Peterborough "	3	150 00	1,333,496	.....	472,040	.....	150 00
Port Arthur "	2	25 00	358,826	.....	151,630	.....	25 00
Prescott "	2	100 00	1,045,200	.....	354,355	.....	100 00
St. Catharines "	2	100 00	1,281,064	.....	519,330	.....	100 00
Stratford "	3	150 00	582,570	.....	276,300	.....	150 00
Toronto "	14	700 00	17,570,192	.....	7,483,817	.....	700 00
Windsor "	2	100 00	2,277,118	.....	1,097,861	.....	100 00
Totals	59	2,900 00	45,338,481	4,368	19,492,695	1,987	3,210 80
Montreal, Que.	19	500 00	19,302,479	17,050	8,209,967	.....	1,312 40
Quebec "	5	225 00	4,440,816	.....	1,762,773	.....	225 00
Sherbrooke "	1	50 00	1,248,700	.....	606,855	.....	50 00
Totals	16	775 00	24,991,995	17,050	10,579,595	.....	1,587 40
St. John, N.B.	2	100 00	1,792,341	.....	661,140	.....	100 00
Halifax, N.S.	3	150 00	2,615,142	.....	910,480	1,260	150 00
Winnipeg, Man.	8	400 00	6,117,489	6,224	2,745,567	.....	846 60
Moose Jaw, Sask.	3	125 00	327,253	720	146,394	.....	504 60
Calgary, Alta.	4	200 00	4,570,041	.....	1,985,217	.....	200 00
Vancouver, B.C.	28	1,350 00	4,154,254	13,375	1,586,035	.....	2,639 10
Victoria "	6	300 00	2,071,802	18,375	633,223	.....	2,181 80
Totals	34	1,650 00	6,226,056	31,750	2,219,258	.....	4,820 90
Dawson, Y.T.	1	50 00	165,299	.....	60,034	.....	50 00
Grand Totals	126	6,350 00	92,144,097	60,112	38,800,380	3,247	11,470 30

W. J. GERALD,
Deputy Minister.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

SESSIONAL PAPER No. 12

APPENDIX A—*Continued*—MALT LIQUOR.

No. 11.—Comparative Statement of Manufacturers for the Nine Months ended March 31, 1907, and the Fiscal Year ended March 31, 1908.

Provinces.	Licenses. No.	Licenses. Fees.	Malt used.	Other commodities used.	Malt Liquor manufactured.	Malt Liquor exported, and used by H.M. Army and Navy.	Total Duty collected, including License Fees.
1907.		$ cts.	Lbs.	Lbs.	Galls.	Galls.	$ cts.
Ontario	59	2,225 00	31,041,219	.....	13,182,693	1,372	2,225 00
Quebec	16	600 00	18,215,345	.....	7,662,014	.....	600 00
New Brunswick	2	75 00	1,103,026	.....	422,870	.....	75 00
Nova Scotia	3	112 50	2,249,370	.....	754,360	963	112 50
Manitoba	10	356 25	4,508,105	6,656	1,912,164	.....	692 55
Alberta	4	150 00	2,646,318	.....	1,260,208	.....	150 00
British Columbia	32	1,200 00	3,484,342	20,250	1,286,933	.....	3,057 60
Yukon Territory (*a*)	....	.....	69,340	.....	24,589	.....	.....
Totals	126	4,718 75	63,317,065	26,906	26,505,831	2,335	6,912 65
1908.							
Ontario	59	2,900 00	45,338,481	4,368	19,492,695	1,987	3,210 80
Quebec	16	775 00	24,991,995	17,050	10,579,595	.....	1,587 40
New Brunswick	2	100 00	1,792,341	.....	661,140	.....	100 00
Nova Scotia	3	150 00	2,615,142	.....	910,480	1,260	150 00
Manitoba	8	400 00	6,117,489	6,224	2,745,567	.....	846 60
Saskatchewan	3	125 00	327,253	720	146,394	.....	504 60
Alberta	4	200 00	4,570,041	.....	1,985,217	.....	200 00
British Columbia	34	1,650 00	6,226,056	31,750	2,219,258	.....	4,820 90
Yukon Territory	1	50 00	165,299	.....	60,034	.....	50 00
Totals	126	6,350 00	92,144,097	60,112	38,800,380	3,247	11,470 30

	9 Months ended March 31, 1907.	1908.
	Galls.	Galls.
Exported	2,335	2,905
Used by H. M. Army and Navy	.....	342
Totals	2,335	3,247

(*a*) License paid 1905-06.

Inland Revenue Department,
Ottawa, June 11, 1908.

W. J. GERALD,
Deputy Minister.

Nine Months ended March 31, 1907, and the Fiscal Year ended March 31, 19

Tobacco. per lb.		Canadian Cigarettes. At $1.50 per M.		Combination Tobacco. At 5c. per lb.			C
Duty.	Warehoused.	Manufactured.	Paid Duty.	Manufactured.	Paid Duty.	Warehoused.	Manufactur
bs.	Lbs.	No.	No.	Lbs.	Lbs.	Lbs.	No.
36,783				209,196	89,369	119,827	
97,827½	5,804	22,700	22,700	1,224,999½	886,773	338,226½	8,509,
14,173½				18,291⅔	18,291⅔		
14,445				7,000	7,000		
53,229	5,804	22,700	22,700	1,459,487⅙	1,001,433⅔	458,053½	8,509,
86,547				265,932	124,671	141,261	
82,039	17,429	217,600	217,600	1,831,070½	1,378,707	452,263½	6,843,
10,542				17,429	16,829	600	
17,286				71,444½	71,444½		
76,414	17,429	217,600	217,600	2,185,876	1,591,651½	594,224½	6,843,

APPENDIX A—*Continued*—TOBACCO.

No1 —RETURN of Manufactures for the Fiscal Year ended March 31, 1908.

DIVISIONS.	LICENSES.		Total Weight of Raw Leaf Tobacco and other Materials actually used.	TOBACCO. At 25 cents per lb.			CIGARETTES. At $3 per M.			CANADIAN TOBACCO. At 5 cents per lb.			CANADIAN CIGARETTES. At $1.50 per M.		COMBINATION TOBACCO. At 5 cents per lb.			COMBINATION CIGARETTES. At $1.50 per M.			SNUFF. At 25 cents. per lb.		At 18 cents per lb.		Total Duty Collected ex-Manufactory, including License Fees.
	Number.	Fees.		Manufactured.	Paid Duty.	Warehoused.	Manufactured.	Paid Duty.	Warehoused.	Manufactured.	Paid Duty.	Warehoused.	Manufactured.	Paid Duty.	Manufactured.	Paid Duty.	Warehoused.	Manufactured.	Paid Duty	Warehoused.	Manufactured.	Paid Duty	Manufactured.	Paid Duty	
		8 cts.	Lbs.	Lbs.	Lbs.	Lbs.	No.	No.	No.	Lbs.	Lbs.	Lbs.	No.	No.	Lbs.	Lbs.	Lbs.	No.	No.	No.	Lbs.	Lbs.	Lbs.	Lbs	$ cts.
Hamilton, Ont	1	75 00	1,177,149	1,158,518	380,821½	777,696½	19,060,700	19,057,700	3,000						295,932	124,671	141,261								152,453 48
Toronto, "	4	290 00	276,739	10,329	10,281	48	200,360	106,360	94,000																9,412 88
Windsor, "	2	160 00	224,683							236,547	236,547														11,927 35
Totals	7	465 00	1,678,571	1,168,847	391,102½	777,744½	19,261,060	19,164,060	97,000	236,547	236,547				295,932	124,671	141,261								173,793 71
Joliette, Que	8	375 00	112,871½							118,806	118,806														6,315 31
Montreal "	26	1,630 00	10,356,439	9,355,945½	1,127,132	8,228,813½	354,114,324	352,748,724	1,365,600	472,705½	455,906½	16,739	217,600	217,600	333,551½	173,301½	160,250				6,735	6,735	82,125	82,125	1,405,414 99
" "							*2,032,570	1,937,470	95,100																
Quebec "	12	730 00	1,680,581½	25,525	22,357½	3,167½	2,025,600	821,400	1,204,200	1,080,366	1,080,366				534,233½	534,233½		6,204,700	4,540,000	1,661,700	447	447	46,865	46,865	104,871 03
St. Hyacinthe, Que	1	25 00	1,579							1,730	1,730														111 50
Sherbrooke, "	3	190 00	1,981,243½							1,115,720½	1,115,030½	690			963,285½	671,172	292,113½	642,100	642,100		1,483	1,483	26,065	26,065	93,525 75
Three Rivers, "	1	50 00	10,140							10,140	10,140														557 00
Totals	51	3,000 00	14,142,854½	9,381,470½	1,149,489½	8,231,981	356,139,924	353,570,124	2,569,800	2,799,168	2,782,039	17,429	217,600	217,600	1,831,070½	1,378,707	452,363½	6,843,800	5,182,100	1,661,700	8,665	8,665	155,055	155,055	1,612,795 58
							*2,032,570	1,937,470	95,100																
Pictou, N.S.	3	190 00	42,171	14,477	7,247	7,230				10,542	10,542				17,429	16,829	600								3,370 30
Charlottetown, P.E.I.	5	330 00	182,299½	71,543½	44,023½	27,520				47,286	47,286				71,444½	71,444½									17,272 42
Winnipeg, Man	1	75 00	3,335	50	50																4,675	4,675	990	990	1,434 45
Grand Totals	67	4,060 00	16,049,231½	10,636,388	1,591,912½	9,044,475½	375,400,984	372,734,184	2,666,800	3,093,843	3,076,414	17,429	217,600	217,600	2,185,876	1,591,651½	594,224½	6,843,800	5,182,100	1,661,700	13,340	13,340	156,045	156,045	1,808,666 46
							*2,032,570	1,937,470	95,100																

* Cigarettes at $8 per M.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

12—6A

W. J. GERALD,
Deputy Minister.

No. 13.—Comparative Statement of Manufactures for the Nine Months ended March 31, 1907, and the Fiscal Year ended March 31, 1908.

Provinces.	Licenses.		Total Weight of Raw Leaf Tobacco and other Materials actually used.	Tobacco. At 25c. per lb.			Cigarettes. At $3 per M.			Canadian Tobacco. At 5c. per lb.			Canadian Cigarettes. At $1.50 per M.		Combination Tobacco. At 5c. per lb.			Combination Cigarettes. At $1.50 per M.			Snuff. At 25c. per lb.		At 18c. per lb.		Total Duty Collected ex-Manufactory, including License Fees.
	Number.	Fees.		Manufactured.	Paid Duty.	Warehoused.	Manufactured.	Paid Duty.	Warehoused.	Manufactured.	Paid Duty.	Warehoused.	Manufactured.	Paid Duty.	Manufactured.	Paid Duty.	Warehoused.	Manufactured.	Paid Duty.	Warehoused.	Manufactured.	Paid Duty.	Manufactured.	Paid Duty.	
1907.		$ cts.	Lbs.	Lbs	Lbs.	Lbs	No.	No.	No.	Lbs.	Lbs.	Lbs	No.	No.	Lbs.	Lbs.	Lbs.	No.	No.	No.	Lbs.	Lbs.	Lbs	Lbs.	$ cts
Ontario	6	292 50	1,389,872	1,024,258½	261,052	763,206½	6,311,800	6,336,800	5,000	186,783	186,783				209,196	89,369	119,827								98,373 50
Quebec	50	2,270 63	9,919,208½	6,614,976½	709,218½	5,905,758	250,733,610	248,969,410	1,764,200	2,013,631½	2,007,827½	5,804	22,700	22,700	1,224,999½	886,773	338,226½	8,509,300	6,243,800	2,265,500	6,704	6,704	114,515	119,515	1,114,772 84
							*1,246,350	1,296,350																	
Nova Scotia	3	142 50	48,506½	16,612½	9,156½	7,456				14,173½	14,173½				18,291½	18,291½									4,054 89
Prince Edward Island	4	198 75	125,458½	76,618½	22,082½	54,536				44,445	44,445				7,000	7,000									8,291 63
Manitoba	1	56 25	2,066	105	105																2,687	2,687	305	305	869 15
Totals	64	2,960 63	11,515,111½	7,732,571	1,001,614½	6,730,956½	257,075,410	255,306,210	1,769,200	2,259,033	2,253,229	5,804	22,700	22,700	1,459,487½	1,001,433½	458,053½	8,509,300	6,243,800	2,265,500	9,391	9,391	119,820	119,820	1,225,701 95
							*1,296,350	1,296,350																	
1908.																									
Ontario	7	465 00	1,678,571	1,168,847	391,102½	777,744½	19,261,060	19,164,060	97,000	236,547	236,547				265,932	124,671	141,261								173,793 71
Quebec	51	3,060 00	14,142,854½	9,381,470½	1,149,486½	8,231,981	356,139,924	353,570,124	2,569,800	2,789,468	2,782,039	17,429	217,600	217,600	1,831,070½	1,378,707	452,363½	6,843,800	5,182,100	1,661,700	8,665	8,665	155,055	155,055	1,612,795 58
							*2,032,570	1,937,470	95,100																
Nova Scotia	3	196 00	42,171	14,477	7,247	7,230				10,542	10,542				17,429	16,829	600								3,379 30
Prince Edward Island	5	330 00	182,293½	71,543½	44,023½	27,520				47,286	47,286				71,444½	71,444½									17,272 42
Manitoba	1	75 00	3,335	50	50																4,675	4,675	990	990	1,434 45
Totals	67	4,060 00	16,049,231½	10,636,388	1,591,912½	9,044,475½	375,400,984	372,734,184	2,666,800	3,093,843	3,076,414	17,429	217,600	217,600	2,185,876	1,591,651½	594,224½	6,843,800	5,182,100	1,661,700	13,340	13,340	156,045	156,045	1,808,666 46
							*2,032,570	1,937,470	95,100																

* Cigarettes at $8 per M.

Inland Revenue Department,
Ottawa, June 11, 1907.

W. J. GERALD,
Deputy Minister.

)MBINATION CIGARETTES. At $1.50 per M.			SNUFF. At 25c. per lb.		At 18c. per lb.		Total Duty Collected ex-Manufactory, including License Fees.
l-ed.	Paid Duty.	Ware-housed.	Manu-factured.	Paid Duty.	Manu-factured.	Paid Duty.	
	No.	No.	Lbs.	Lbs.	Lbs.	Lbs.	$ cts
							98,373 50
300	6,243,800	2,265,500	6,704	6,704	113,515	113,515	1,114,172 81
							4,054 89
							8,291 63
			2,687	2,687	305	305	809 15
300	6,243,800	2,265,500	9,391	9,391	119,820	119,820	1,225,701 93
							173,793 71
800	5,182,100	1,661,700	8,665	8,665	155,055	155,055	1,612,795 58
							3,370 30
							17,272 42
			4,675	4,675	990	990	1,434 45
800	5,182,100	1,661,700	13,340	13,340	156,045	156,045	1,808,666 46

W. J. GERALD,
Deputy Minister.

8.

Navy, Stores.	Written off by Authority.		Taken for Re-working.				Remaining in Warehou			
Cigarettes.	Tobacco.	Combination Tobacco.	Tobacco.	Cigarettes.	Canadian Tobacco.	Combination Tobacco.	Tobacco.	Cigarettes.	Canadian Tobacco.	Combination Tobacco.
No.	Lbs.	Lbs.	Lbs.	No.	Lbs.	Lbs.	Lbs.	No.	Lbs.	Lbs.
							517,389½			12,880
		25,974		32,000	2,050	6,532	549,448	1,084,290	22,081	97,309
							17,304			
			3,964		2,044		55,505½	10,000		
			1,239				13,267			4,511
							167,632			
							44,906			
							103,439			
							1,530			
							19,719½			
		25,974	5,203	32,000	4,094	6,532	1,490,140½	1,094,290	22,081	114,700
	1,686						455,621	50,000		17,458
1,000				15,000	286	8,350	605,187	1,080,700	18,664½	86,166
							7,033½			
		600	430				26,956½	10,000		
			1,202			4,511	5,219			
							71,348			
							767			
							3,545			
							44,380			
							19,719½			
1,000	1,686	600	1,632	15,000	286	12,861	1,239,776½	1,140,700	18,664½	103,624

APPENDIX A. *Continued.* TOBACCO.

INLAND REVENUE.

No. 11.—WAREHOUSE Return for the Fiscal Year ended March 31, 1900.

W. J. GERALD,
Deputy Minister

No. 15 COMPARATIVE STATEMENT of Warehouse Returns for the nine months ended March 31, 1907, and the Fiscal Year ended March 31, 1908

Remaining in Warehouse from Last Year					Withdrawn					Received from other Districts					Totals					Entered for Consumption						Removed to other Districts			Exported				Aerated and Navy Plug, Written up in anti-Scrip Stamps				Taken for Re-working				Remaining in Warehouse					Totals				
Unmanufactured Tobacco	Cigars	Canadian Tobacco	Cut Tobacco, Fine Cut, Plug	Cigarettes	Unmanufactured Tobacco	Cigars	Canadian Tobacco	Cut Tobacco, Fine Cut, Plug	Cigarettes	Unmanufactured Tobacco	Cigars	Canadian Tobacco	Cut Tobacco, Fine Cut, Plug	Cigarettes	Unmanufactured Tobacco	Cigars	Canadian Tobacco	Cut Tobacco, Fine Cut, Plug	Cigarettes	Unmanufactured Tobacco	Cigars	Canadian Tobacco	Cut Tobacco, Fine Cut, Plug	Cigarettes	Unmanufactured Tobacco	Duty	Tobacco Warehoused in Distress to be Taken out which Removed	Tobacco Warehoused in Transit	Tobacco	Cigars	Canadian Tobacco	Cut Tobacco, Fine Cut, Plug	Cigarettes	Tobacco	Cigars	Canadian Tobacco	Cut Tobacco, Fine Cut, Plug	Cigarettes	Tobacco	Cigars	Canadian Tobacco	Cut Tobacco, Fine Cut, Plug	Cigarettes	Unmanufactured Tobacco	Cigars	Canadian Tobacco	Cut Tobacco, Fine Cut, Plug	Cigarettes
Lbs.	No.	Lbs.	Lbs.	No.	Lbs.	No.	Lbs.	Lbs.	No.	Lbs.	Lbs.	Lbs.	Lbs.	No.	Lbs.	Lbs.	Lbs.	Lbs.	No.	Lbs.	No.	Lbs.	Lbs.	No.	Lbs.	$ cts.	Lbs.	Lbs.	Lbs.	Lbs.	No.	Lbs.	Lbs.	Lbs.	No.	Lbs.	No.	Lbs.	Lbs.	No.	Lbs.	No.	Lbs.	Lbs.	No.	Lbs.	No.	Lbs.	Lbs.	No.
1907																																																
Ontario																				1,216,824	125,151	46	125,151	46	472,915				50,023	6,040					517,093			12,880				2,407,712	6,000		141,781	
Quebec																				7,892,643	749,346	79	749,346	79	2,970,974				54,234	100,000	160	5,424			549,138	1,004,290	97,800	12,880	142,800			9,417,711	2,077,736	32,450	141,781	485,756	3,040,624
New Brunswick																				1,461,500	256,531		256,531													17,401							254,835					
Nova Scotia																				8,142	75,744	05							2,477				3,704			3,961	10,000			94,913	10,000	2,041	4,541		
Prince Edward Island																					15,289	50													2,267	1,250						14,581					
Manitoba																				1,195,056	292,767	50													13,267			4,541				321,575					
Alberta																				1,195,056	49,995	12													102,845							223,607					
British Columbia																					104,995	12													14,999							268,858					
Yukon Territory																					97,140	00				4,748									101,159							178,440					
Northwest																					157	50													3,450							4,500					
																																			19,719							19,719					
Totals																				6,436,854	1,461,500		8,142		47,977	2,961,159			54,234	100,000	160	5,424			1,430,149	1,014,290	97,800	114,700	161,800			11,661,321	2,077,736	34,497	965,959	3,040,624	
1908																																																
Ontario																				1,176,784	44,040		136,683			449,797	54	448,533	58,044	71,244	9,000							1,680					459,924	50,000		17,158			2,278,743	97,000		154,141	
Quebec																				4,004,176	1,462,780		434,177	2,760,100	58,000	1,078,120	91	1,960,104	103,254	66,982	70,000	845		552	51,000			15,000	246	8,356	459,924	1,099,746	18,044	86,400	401,100	30,400	8,948,335	2,654,000	32,500	540,674	2,922,240	95,100
New Brunswick																				283,446						75,453	97														346,200					
Nova Scotia																				426,425						166,020	34							8,075							89,095	10,000		600		
Prince Edward Island																				94,136						8,343	75														10,797			4,541		
Manitoba																				1,504,900						398,781	24	1,071													1,902,752					
Alberta																				1,504,900						398,781	24														1,903,681					
British Columbia																										1,262	50														71	18					
Yukon Territory																										62,574	93														75						
Northwest																										126,704	04	4,568													1,687½						
																										14	00														11,989						
																																										19,719½						
Totals																				8,917,249½	1,507,820		570,860	2,760,100	58,000	2,227,113	96	1,420,553	227,298	138,226½	79,000	845		5,984½	51,000	1,680		15,000	246	8,356	1,239,776½	1,149,746	18,044	103,024	401,100	30,400	11,905,171½	2,764,000	32,500	708,925	2,922,240	95,100

DEPARTMENT OF INLAND REVENUE,
OTTAWA, June 11, 1908.

W. J. GERALD,
Deputy Minister

Total duty collected, ex manufactory and ex warehouse, including

	1907	1908
Canada Twist and Raw Leaf	$4,082,858 73	$5,042,273 07
License Fees	6,000 13	4,127 00
Totals	$4,088,858 86	$5,046,400 07

Cr.

SE.		Totals.					
Combination Cigarettes.	Overweight Cigarettes.	Tobacco.	Cigarettes.	Canadian Tobacco.	Combination Tobacco.	Combination Cigarettes.	Overweight Cigarettes.
No.	No.	Lbs.	No.	Lbs.	Lbs.	No.	No.
		2,307,752	5,000		141,781		
957,500		6,474,114½	2,677,790	32,438½	448,758	3,040,624	
		253,835					
		384,615	10,000	2,044			
		64,884			4,511		
		1,325,682					
		208,858½					
		459,300					
		4,560					
		19,719½					
967,500		11,503,320½	2,692,790	34,482½	595,050	3,040,624	
	36,600	2,778,713½	97,000		154,141		
461,100		8,845,316½	3,654,090	39,510	549,673	2,629,200	95,100
		300,385					
		466,050½	10,000		600		
		40,787			4,511		
		1,627,224					
		25,829					
		273,841					
		573,689½					
		3,616					
		19,719½					
461,100	36,600	14,955,171½	3,761,090	39,510	708,925	2,629,200	95,100

W. J. GERALD,
Deputy Minister

APPENDIX A—*Continued*—RAW LEAF TOBACCO, INCLUDING STEMS,

DR. No. 16.—WAREHOUSE RETURN for the

Remaining in Warehouse from last year.	Imported.	Warehoused ex-Factory.	Received from other Divisions.	Totals.	DIVISIONS.
Std lbs.	Std. lbs.	Std. lbs.	Std. lbs.	Std. lbs.	
571	7,426	. . . . .	7,367	15,364	....Belleville, Ont . . . . .
66,456	71,855	11,701	1,402	151,414	....Brantford " .....
.....	.....	.....	1,169	1,169	....Cornwall " .. ..
29,493	51,157¼	2,586	2,631	85,867¼	....Guelph " ....
1,092,406	1,456,373½	271,913	9,525	2,830,217½	....Hamilton " .. ..
70,194	65,994	10,500	1,114	147,802	....Kingston " .. ..
271,460	584,218	86,061	13,536	955,275	....London " .....
4,213	6,829	.. ....	5,057	16,099	....Ottawa " .....
1,923½	11,596½	. .....	.....	13,520	....Owen Sound " ... .
1,602	3,029	1,434	2,860	8,925	....Perth " . .....
1,439	2,153	.....	.....	3,592	....Peterborough " .. ..
.....	3,586	.....	.....	3,586	....Port Arthur " .....
2,341	8,125	1,401	493	12,360	....Prescott " ..... .
17,034	21,647	2,082	2,184	42,947	.. St. Catharines " ....
16,970	25,094	1,724	.. .. ..	43,788	... Stratford " .....
335,008	410,358	83,207	9,403	837,976	....Toronto " ... .
16,788	28,902	2,173	2,567	50,430	....Windsor " ....
1,927,898½	2,758,343¼	474,782	59,308	5,220,331¾	.....Totals..... . ....
932	6,859	. .	22,656¾	30,447¾	...Joliette, Que ....
7,224,867¾	10,255,609¾	307,103	46,031	17,833,611½	....Montreal " . ....
89,013	325,621	18,352½	28,679½	461,666	....Quebec " ....
9,658	18,500	230	16,090½	44,478½	....St. Hyacinthe " ... .
204,478	242,449	26,078	16,768½	489,773½	....Sherbrooke " .. ..
1,285	2,503½	.....	1,839¼	5,627¾	....Three Rivers " .....
7,530,233¾	10,851,542¼	351,763½	132,065½	18,865,605	.....Totals..... ... .
16,687¼	37,981¾	8,428	888	63,985	...St. John, N.B ....
3,559	7,641½	....	2,162	13,362½	....Halifax, N.S.....
13,502	7,536	. .....	143	21,181	....Pictou " ....
17,061	15,177½	.....	2,305	34,543½	.....Totals..... ... .
47,186	57,421	... .	... .	104,607	. . .Charlottetown, P.E.I .....
75,250	158,340	19,895	4,678¾	258,163¾	....Winnipeg, Man ....
.....	6,071	159	2,055	8,285	....Moose Jaw, Sask . .....
6,873	27,787	6,000	4,011½	44,671½	...Calgary, Alta..... .
40,156	145,696½	25,976	7,337	219,165½	... Vancouver, B.C. ....
11,340	54,866	5,254	4,088¼	75,548¼	....Victoria " .....
51,496	200,562½	31,230	11,425¼	294,713¾	.....Totals.....
9,672,685½	14,113,226¼	892,257½	216,737	24,894,906¼	..... Grand Totals ....

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

SESSIONAL PAPER No. 12

SCRAPS AND CUTTINGS.

Fiscal Year ended March 31, 1908. CR.

Entered for Consumption.		Removed to other Divisions.		Exported.	Written off.	Taken for Horticultural purposes, and destroyed.	Re-entered for Manufacture.	Remaining in Warehouse.	Totals.
Quantity.	Duty.	Warehoused in Divisions to which removed.	In Transit.						
Std. lbs.	$ cts.	Std. lbs.	Std. lbs.	Std. lbs.	Std. lbs.	Std. lbs.	Std. lbs.	Std. lbs.	Std. lbs.
10,971	1,097 10	40	.....	.....	.....	.....	462	3,891	15,364
102,010	10,207 72	2,303	.....	10,312	....	75	535	36,179	151,414
.....	.....	.....	.....	.....	.....	1,169	.....	.....	1,169
61,338¼	6,187 95	252	.....	2,586	.....	.....	.....	21,691	85,867¼
1,499,588½	150,098 53	7,893	.....	252,447	.....	501	6,112	1,063,676	2,830,217½
75,943	7,594 30	7,533	.....	16,500	....	100	1,965	51,761	147,802
652,245	67,083 74	19,525	153	91,682	..	.....	12,711	178,959	955,275
9,215	921 50	180	... ...	128	...	4,597	388	1,591	16,099
11,299	1,129 90	.....	.. ...	.....	.....	.....	.....	2,221	13,520
5,612	561 20	186	.....	.....	.....	.....	.....	3,127	8,925
3,110	311 00	... ...	.....	.....	..	.....	.....	482	3,592
1,356	135 60	.....	.....	.....	.....	.. ...	.... .	2,230	3,586
8,241	824 10	1,401	.....	.....	..	.....	.....	2,718	12,360
28,243	2,827 22	152	.....	1,207	.....	31	2,072	11,242	42,947
30,058	3,005 80	.....	... .	1,724	.. .	.....	.....	12,006	43,788
545,505	59,270 10	6,105	.....	80,530	.....	339	4,636	200,861	837,976
23,305	2,330 50	.....	... ...	11,024	295	.....	2,252	13,554	50,430
3,068,039¾	313,586 26	45,570	153	462,140	295	6,812	31,13	1,606,189	5,220,331¾
10,711¾	2,562 66	1,413	.....	.....	....	16,353	272	1,698	30,447¾
10,771,229½	1,109,447 92	116,438	3,678½	254,311	... .	.....	26,465	6,661,489½	17,833,611½
296,339½	49,187 72	17,064	450½	11,728	.....	290	19,709	116,085	461,666
30,241½	3,027 83	3,843	1,469	.....	.....	.....	524	8,401	44,478½
263,611½	43,212 02	9,052	.....	19,443	.....	.....	14,790	182,877	489,773½
5,464¼	892 51	....	.....	.....	.....	.....	1½	162	5,627¾
11,377,598	1,208,330 66	147,810	5,598	285,482	. ....	16,643	61,761½	6,970,712½	18,865,605
43,604¼	4,999 99	4	.....	8,758	.....	.....	.....	11,618¾	63,985
11,354½	1,135 45	436	.. ....	.....	.. .	14	....	1,558	13,362½
15,189	1,868 50	.....	.....	2,902	.....	64	.....	3,026	21,181
26,543½	3,063 95	436	.....	2,902	. ..	78	... ..	4,584	34,543½
74,151	8,866 50	.....	.....	....	.....	....	....	30,456	104,607
152,123¾	15,268 98	13,601	....	18,771	.....	....	1,469	72,199	258,163¾
4,823	482 30	159	.....	.....	... ..	... .	.....	3,303	8,285
31,659½	3,165 95	4,318	.....	2,141	... ..	..... .	.....	6,553	44,671½
130,784½	13,221 01	3,224	5,475	15,979	. .	..... :	668	63,035	219,165½
53,079¼	5,404 70	1,615	.....	5,254	.....	.....	219	15,381	75,548¼
183,863¾	18,625 71	4,839	5,475	21,233	...	... .	887	78,416	294,713¾
14,962,406½	1,576,330 30	216,737	11,226	801,427	295	23,533	95,250½	8,784,031¼	24,891,906¼

W. J. GERALD,
Deputy Minister.

APPENDIX A—*Continued*—RAW LEAF TOBACCO, INCLUDING STEMS,

No. 17.—Comparative Statement of Warehouse Returns for the Nine Months

Remaining in Warehouse from last year.	Imported.	Warehoused ex-Factory.	Received from other Divisions.	Totals.	Provinces.
Std. lbs.	Std. lbs.	Std. lbs.	Std. lbs.	Std. lbs.	1907.
2,341,517¼	2,270,326	360,601	54,781	5,027,225¼	....Ontario.....
5,177,390	10,759,147½	265,614	92,524¾	16,294,676¼	...Quebec .....
25,905¼	13,575¾	5,222	716¾	45,419¾	....New Brunswick.....
22,080	21,017	.....	250	43,347	....Nova Scotia.....
62,209	60,301	.....	.....	122,510	....P. E. Island.....
60,043¾	154,760	11,758	8,106	234,667¾	... Manitoba.....
5,593	22,340¾	3,422	737	32,092¾	....Alberta.....
31,935	132,197	11,113	4,452	179,697	....British Columbia .....
7,726,673¼	13,433,665	657,730	161,567½	21,979,635¾	.....Totals.....
					1908.
1,927,898½	2,758,343¼	474,782	59,308	5,220,331¾	....Ontario .....
7,530,233¾	10,851,542¼	351,763½	132,065½	18,865,605	.. Quebec.....
16,687¼	37,981¾	8,428	888	63,985	....New Brunswick.....
17,061	15 177½	.....	2,305	34,543½	..Nova Scotia .....
47,186	57,421	.....	.....	104,607	...P. E. Island.....
75,250	158,340	19,895	4,678¾	258,163¾	....Manitoba.....
.....	6,071	159	2,055	8,285	...Saskatchewan.....
6,873	27,787	6,000	4,011½	44,671½	.. Alberta.....
51,496	200,562½	31,230	11,425¼	294,713¾	....British Columbia.....
9,672,685½	14,113,226¼	892,257½	216,737	24,894,906¼	.....Totals.....

Inland Revenue Department,
Ottawa, June 11, 1908.

SCRAPS AND CUTTINGS.

ended March 31, 1907 and the Fiscal Year ended March 31, 1908.

Entered for Consumption.		Removed to other Divisions.		Exported.	Written off.	Taken for Horticultural purposes, and destroyed.	Re-entered for Manufacture.	Remaining in Warehouse.	Totals.
Quantity.	Duty.	Warehoused in Divisions to which removed.	In transit.						
Std. lbs.	$ cts.	Std. lbs.	Std. lbs.	Std. lbs.	S. lbs.	Std. lbs.	Std. lbs.	Std. lbs.	Std. lbs.
2,608,182¾	266,354 92	42,387	.....	421,502	....	1,076	26,179	1,927,898½	5,027,225¼
8,382,523¼	890,633 50	99,649	.....	209,877	240	150	72,003	7,530,233¾	16,294,676¼
23,807½	2,929 68	....	.. ....	4,925	.....	.....	.....	16,687¼	45,419¾
24,802	3,380 40	.....	.....	1,484	.....	... ...	.....	17,061	43,347
75,324	7,532 40	.....	.....	.....	.....	.....	.. ....	47,186	122,510
133,913¾	13,448 58	15,038	.....	10,214	....	118	134	75,250	234,667¾
21,524¼	2,152 42	153½	.....	3,422	...	.....	120	6,873	32,092¾
116,253	11,690 58	4,340	.....	7,504	....	.....	104	51,496	179,697
11,386,330¾	1,198,122 48	161,567½	.....	658,928	240	1,344	98,540	9,672,685½	21,979,635¾
3,068,039¾	313,586 26	45,570	153	462,140	295	6,812	31,133	1,606,189	5,220,331¾
11,377,598	1,208,330 66	147,810	5,598	285,482	. ..	16,643	61,761½	6,970,712½	18,865,605
43,604¼	4,999 99	4	... .	8,758	.....	.....	... ...	11,618¾	63,985
26,543½	3,003 95	436	.....	2,902	. ...	78	.....	4,584	34,543½
74,151	8,866 50	....	.....	.....	.....	... ...	.....	30,456	104,607
152,123¾	15,268 98	13,601	.....	18,771	.....	. ....	1,469	72,199	258,163¾
4,823	482 30	159	.....	.....	....	.....	.....	3,303	8,285
31,659½	3,165 95	4,318	.....	2,141	.....	.....	... ..	6,553	44,671½
183,863¾	18,625 71	4,839	5,475	21,233	....	.....	887	78,416	294,713¾
14,962,406½	1,576,330 30	216,737	11,226	801,427	295	23,533	95,250½	8,784,031¼	24,894,906¼

W. J. GERALD,
Deputy Minister.

APPENDIX A.—*Continued*—CANADA TWIST TOBACCO.

No. 18.—STATEMENT of Revenue collected from Canada Twist Tobacco for the Fiscal Year ended March 31, 1908.

DIVISIONS.	LICENSES.		Canada Twist, at 5 cts. per lb.	Total Duty Collected, including License Fees.
	No.	Fees.		
		$ cts.	Lbs.	$ cts.
Cornwall, Ont	1	2 00	250	14 50
Ottawa "	6	11 00	1,090	65 50
Prescott "	1	2 00	360	20 00
Toronto "	1	2 00	250	14 50
Totals	9	17 00	1,950	114 50
Joliette, Que	1	2 00	100	7 00
Montreal "	24	48 00	11,397	617 85
Totals	25	50 00	11,497	624 85
Grand Totals	34	67 00	13,447	739 35

W. J. GERALD,
Deputy Minister.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

CANADA TWIST TOBACCO.

No. 19.—Comparative Statement for the Nine Months ended March 31, 1907, and the Fiscal Year ended March 31, 1908.

Years.	Provinces.	Licenses.		Canada Twist, at 5 cts. per lb.	Total Duty Collected, including License Fees.
		No.	Fees.		
			$ cts.	Lbs.	$ cts.
1907	Ontario	12	17 50	2,030	119 00
	Quebec	35	52 00	13,962	756 10
	Totals	47	69 50	15,992	875 10
1908	Ontario	9	17 00	1,950	114 50
	Quebec	25	50 00	11,497	624 85
	Totals	34	67 00	13,447	739 35

W. J. GERALD,
Deputy Minister.

Inland Revenue Department,
Ottawa, June 11, 1908.

APPENDIX A—*Continued*—CIGARS

No. 20.—RETURN of Manufactures for

DIVISIONS.	LICENSES.		Total Raw Leaf Tobacco and other Materials actually used.	Deficiencies Paying Duty.	CIGARS AT $7 PER THOUSAND.			CIGARS AT
	No.	Fees.			Manufactured	Paid Duty.	Warehoused.	Manufactured.
		$ cts.	Lbs.	No.	No.	No.	No.	No.
Belleville, Ont	2	150 00	9,972					610,650
Brantford "	7	525 00	88,703		1,500	1,500		5,051,895
Guelph "	8	600 00	56,446¼					3,295,800
Hamilton "	10	750 00	191,884½	7,909				9,730,775
Kingston "	2	150 00	63,692		3,000	3,000		3,302,825
London "	21	1,575 00	598,794	33,290	1,200		1,200	34,389,100
Ottawa "	1	75 00	9,403					597,125
Owen Sound, Ont	1	75 00	12,035					553,775
Perth "	1	75 00	4,079					193,700
Peterborough "	2	150 00	3,045					170,250
Port Arthur "	2	125 00	2,678					52,565
Prescott "	1	75 00	6,998					378,400
St. Catharines "	12	900 00	28,281					1,554,725
Stratford "	2	150 00	26,805					1,446,305
Toronto "	23	1,562 50	435,099		2,712	2,712		23,355,980
Windsor "	8	600 00	27,643					1,445,100
Totals	103	7,537 50	1,565,557¾	41,199	8,412	7,212	1,200	86,128,970
Joliette, Que	5	287 50	89,070¾					317,100
Montreal "	34	2,525 00	1,375,354½	10,184	10,452	10,452		70,226,870
Quebec "	7	462 50	157,722½		1,002	1,002		8,283,965
St. Hyacinthe, Que	5	340 00	61,838½					3,194,740
Sherbrooke "	5	365 00	170,754½					9,136,980
Three Rivers "	2	140 00	13,426¾					216,200
Totals	58	4,120 00	1,868,167½	10,184	11,454	11,454		91,375,855
St. John, N.B	6	392 50	69,365¼	1,936				1,534,600
Halifax, N.S	2	150 00	11,180½					588,200
Pictou, "	1	75 00	994					62,300
Totals	3	225 00	12,174½					650,500
Winnipeg, Man	11	787 50	133,269¾					6,849,145
Moose Jaw, Sask	3	187 50	3,944					212,900
Calgary, Alberta	4	300 00	27,210					1,348,645
Vancouver, B.C	16	1,162 50	111,352½					6,253,100
Victoria, "	10	740 00	44,429¼					2,358,675
Totals	26	1,902 50	155,781¾					8,612,075
Grand Totals	214	15,452 50	3,835,470½	53,319	19,866	18,666	1,200	196,712,690

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1907.

the Fiscal Year ended March 31, 1908.

$6 per Thousand.		Canadian Cigars at $3 per Thousand.			Combination Cigars at $3 per Thousand.			Total Duty collected ex-Manufactory, including License Fees.
Paid Duty.	Warehoused	Manufactured.	Paid Duty	Warehoused.	Manufactured.	Paid Duty	Warehoused.	
No.	No.	No.	No.	No.	No.	No.	No.	$ cts.
244,300	366,350							1,615 80
3,525,160	1,526,735							21,686 46
955,225	2,340,575							6,331 35
3,091,195	6,639,580							19,344 62
997,150	2,305,675							6,153 90
20,387,140	14,001,960							124,097 58
240,250	356,875							1,516 50
106,450	447,325							713 70
68,700	125,000							487 20
124,250	46,000							895 50
35,015	17,550	91,800	91,800					610 49
	378,400							75 00
1,238,700	316,025							8,332 20
982,930	463,375							6,047 58
17,954,415	5,401,565	854,000	392,600	461,400				110,485 77
658,000	787,100							4,548 00
50,668,880	35,520,090	945,800	484,400	461,400				312,941 65
247,000	70,100	646,500	525,500	121,000	3,868,850	2,585,225	1,283,625	11,101 68
29,571,530	40,655,340	439,150	142,300	296,850				180,515 34
3,049,965	5,234,000				879,110	659,450	219,660	20,747 65
1,812,355	1,382,385	131,200	126,000	5,200	29,850	10,350	19,500	11,623 18
4,939,690	4,197,290				330,380	330,380		30,994 28
82,500	133,700				548,350	458,800	89,550	2,011 40
39,703,040	51,672,815	1,216,850	793,800	423,050	5,656,540	4,044,205	1,612,335	256,993 53
591,075	943,525				2,667,900	1,014,450	1,653,450	6,993 92
434,025	154,175							2,754 15
53,850	8,450							398 10
487,875	162,625							3,152 25
3,266,720	3,582,425							20,387 82
192,350	20,550							1,341 60
811,220	537,425							5,167 32
5,910,300	343,100							36,624 30
1,917,800	440,875				71,950	71,950		12,462 65
7,828,100	783,975				71,950	71,950		49,086 95
103,489,260	93,223,430	2,162,650	1,278,200	884,450	8,396,390	5,130,605	3,265,785	656,065 04

W. J. GERALD,
Deputy Minister.

APPENDIX A —*Continued*—CIGARS.

DR. No. 21—COMPARATIVE STATEMENT of Manufactures for the Nine Months

PROVINCES.	LICENSES.		Total Raw Leaf Tobacco and other materials actually used.	DEFICIENCIES PAYING DUTY.		CIGARS AT $7 PER THOUSAND.			CIGARS
	No.	Fees.		Foreign.	Combination.	Manufactured.	Paid Duty	Warehoused.	Manufactured.
		$ cts.	Lbs.	No.	No.	No.	No.	No.	No.
1907									
Ontario	101	5,561 26	1,209,079¾	357,836	.....	12,900	9,300	3,600	65,594,625
Quebec	58	3,090 01	1,375,203¾	20,478	.....	255,780	255,780	.....	66,678,080
New Brunswick	6	322 50	52,127½	.....	20,581	.....	.....	.....	918,935
Nova Scotia	3	168 75	9,926	.....	....	.....	.....	.....	504,895
Manitoba	13	731 25	117,310¾	.....	.....	14,832	14,832	.....	6,200,580
Alberta	4	225 00	18,132¼	.....	.....	.....	.....	.....	903,925
British Columbia	25	1,398 75	97,420	.....	183	1,950	1,950	.....	5,556,050
Totals	210	11,497 52	2,879,200	378,314	20,764	285,462	281,862	3,600	146,357,090
1908									
Ontario	103	7,537 50	1,565,557¾	41,199	.....	8,412	7,212	1,200	86,128,970
Quebec	58	4,120 00	1,868,167½	10,184	.....	11,454	11,454	.....	91,375,855
New Brunswick	6	392 50	69,365¼	1,936	.....	.....	.....	.....	1,534,600
Nova Scotia	3	225 00	12,174½	.....	....	.....	.....	.....	650,500
Manitoba	11	787 50	133,269¾	.....	.....	.....	.....	.....	6,849,145
Saskatchewan	3	187 50	3,944	.....	.....	.....	.....	.....	212,900
Alberta	4	300 00	27,210	.....	.....	.....	.....	.....	1,348,645
British Columbia	26	1,902 50	155,781¾	.....	.....	.....	.....	.....	8,612,075
Totals	214	15,452 50	3,835,470½	53,319	..	19,866	18,666	1,200	196,712,690

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

ended March 31, 1907 and the Fiscal Year ended March 31, 1908. Cr.

At $6 per Thousand.		Canadian Cigars at $3 per Thousand.			Combination Cigars at $3 per Thousand.			Total Duty collected ex-Manufactory, including License Fees.
Paid Duty.	Warehoused.	Manufactured.	Paid Duty	Warehoused.	Manufactured.	Paid Duty	Warehoused.	
No.	No.	No.	No.	No.	No.	No.	No.	$ cts.
41,423,350	24,171,275	180,600	180,600		17,750	9,525	8,225	256,883 84
35,311,175	31,366,905	977,570	769,770	207,800	4,737,060	3,671,510	1,065,550	230,194 23
337,060	581,875				1,860,550	259,550	1,601,000	3,185 25
351,435	153,460							2,277 36
3,099,540	3,101,040							19,432 33
553,025	350,900							3,543 15
5,197,500	358,550				46,100	46,100		32,736 25
86,273,085	60,084,005	1,158,170	950,370	207,800	6,661,460	3,986,685	2,674,775	548,252 41
50,608,880	35,520,090	945,800	484,400	461,400				312,941 65
39,703,040	51,672,815	1,216,850	793,800	423,050	5,656,540	4,044,205	1,612,335	256,993 53
591,075	943,525				2,667,900	1,014,450	1,653,450	6,993 92
487,875	162,625							3,152 25
3,266,720	3,582,425							20,387 82
192,350	20,550							1,341 60
811,220	537,425							5,167 32
7,828,100	783,975				71,950	71,950		49,086 95
103,489,260	93,223,430	2,162,650	1,278,200	884,450	8,396,390	5,130,605	3,265,785	656,065 04

W. J. GERALD,
Deputy Minister.

Nine Months ended March 31, 1907, and the Fiscal Year ended March 31, 1908.

Consumption.		Removed in Bond to other Divisions.					Exported.		
		Foreign.		Canadian.	Combination.				
Combination at $3 per M.	Duty.	Warehoused in Divisions to which removed.	In Transit.	Warehoused in Divisions to which removed.	Warehoused in Divisions to which removed.	In Transit.	Foreign	Combination	
No.	$ cts.	No.	No.	No.	No.	No.	No.	No.	
42,225	165,113 72	2,498,500							
926,300	162,655 41	4,258,950		40,500	476,500		2,500		
2,026,800	10,259 85						13,000	25,000	
	1,204 32								
	20,765 46								
	2,167 65								
	2,338 80								
2,995,325	364,505 21	6,757,450		40,500	476,500		15,500	25,000	
30,000	228,828 45	2,350,300	10,000				17,000		
1,267,950	250,826 37	5,034,100			667,500	25,000	9,400		
2,440,400	12,109 50						3,000		
	1,204 26								
	28,473 45	14,625							
	138 00								
	2,889 60	101,875							
	3,645 45								
3,738,350	528,115 08	7,500,900	10,000		667,500	25,000	29,400		

	1907.	1908.
warehouse	$ 901,260 10	$ 1,168,727 62
	11,497 52	15,452 50
	$912,757 62	$ 1,184,180 12

DR. No. 22.—WAREHOUSE RETURN for the Fiscal Year ended March 31, 1908. CR.

REMAINING IN WAREHOUSE FROM LAST YEAR.			WAREHOUSED.			RECEIVED FROM OTHER DIVISIONS.		TOTALS.			DIVISIONS.	ENTERED FOR CONSUMPTION.				REMOVED IN BOND TO OTHER DIVISIONS.				EXPORTED	WRITTEN OFF.	REMAINING IN WAREHOUSE			TOTALS.		
																Foreign.											
																Warehoused in Divisions to which removed	In Transit	Warehoused in Divisions to which removed	In Transit.								
Foreign.	Canadian.	Combination.	Foreign.	Canadian.	Combination.	Foreign.	Combination.	Foreign.	Canadian.	Combination.		Foreign, at 80 p. M.	Canadian, at 83 p. M.	Combination, at 83 p. M.	Duty.					Foreign.	Foreign.	Foreign.	Canadian.	Combination.	Foreign.	Canadian.	Combination.
No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.		No.	No.	No.	$ cts.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
			366,350					366,350			Belleville, Ont.	261,500			1,569 00							104,850			366,350		
1,283,190			1,926,735			630,500		3,440,425			Brantford "	2,038,825			12,232 95							1,401,600			3,440,425		
383,300			2,340,575					2,723,875			Guelph "	2,170,175			13,021 05	125,000	10,000					418,700			2,723,875		
3,114,950			6,639,580			5,164,900		14,918,430			Hamilton "	11,870,820			71,224 92	9,400				17,000		3,021,210			14,918,430		
1,012,700			2,305,675			60,000		3,378,375			Kingston "	2,539,500			15,237 00	15,000						823,875			3,378,375		
3,764,885			*14,993,190			80,500		17,838,575			London "	*10,736,170			64,382 22	2,260,900						4,917,475			17,848,545		
96,550			356,875			180,000	40,000	633,425		40,000	Ottawa "	480,800		30,000	2,974 80							122,625			633,425		40,000
142,025			447,325					589,950			Owen Sound "	482,000			2,892 00							107,950			589,950		
29,000			125,000					154,000			Perth "	69,000			414 00							85,000			154,000		
25,800			46,000					71,800			Peterborough "	52,000			312 00							19,800			71,800		
			17,550					17,550			Port Arthur "	4,500			27 00							13,050			17,550		
48,500			378,400					426,900			Prescott "	345,000			2,070 00							81,900			426,900		
129,550			316,025					436,575			St. Catharines "	307,350			1,844 10							129,225			436,575		
83,650			463,875					547,025			Stratford "	432,950			2,597 70							114,075			547,025		
2,086,450			5,401,565	461,400		220,000		7,708,015	461,400		Toronto "	5,539,510	412,400		34,474 26							2,168,505	49,000		7,708,015	461,400	
273,400			787,100			16,000		1,076,500			Windsor "	592,575			3,555 45						12,875	471,050			1,076,500		
12,464,550			35,521,290	461,400		6,351,900	40,000	54,337,740	461,400	40,000	Totals	37,916,675	412,400	30,000	228,828 45	2,350,300	10,000			17,000	12,875	14,030,890	49,000	10,000	54,337,740	461,400	40,000
24,250	1,000	60,000	70,100	121,000	1,283,625			94,350	175,000	1,343,625	Joliette, Que.	94,350	102,000	235,000	1,577 10			627,500	25,000				73,000	456,125	94,350	175,000	1,343,625
7,246,630		10,000	40,625,340	296,850		10,000	595,500	47,911,970	296,850	605,500	Montreal "	32,489,725		665,500	196,754 85	4,218,100				9,400		11,194,745	296,850		47,911,970	296,850	605,500
1,732,545	15,000	143,150	5,234,000		219,660		32,000	6,966,545	15,000	394,810	Quebec "	4,378,180	15,000	292,900	27,192 78							2,588,365		101,910	6,966,545	15,000	394,810
39,475	15,500	8,500	1,392,385	5,200	19,500	24,400		1,445,560	20,700	28,000	St. Hyacinthe "	347,470	20,700	28,000	2,231 82	695,400						402,980			1,445,560	20,700	28,000
1,141,150			4,197,290			10,000		5,348,440			Sherbrooke "	3,649,345			21,896 07	120,660						1,578,495			5,348,440		
76,525		70,400	133,700		89,550			210,225		159,950	Three Rivers "	142,500		106,250	1,173 75			40,000				67,725		13,700	210,225		159,950
10,259,575	84,500	292,350	51,672,815	423,050	1,612,335	44,400	627,500	61,976,790	507,550	2,532,185	Totals	41,101,570	137,700	1,267,650	250,826 37	5,034,100		667,500	25,000	9,400		15,831,720	369,850	571,735	61,976,790	507,550	2,532,185
438,520		870,650	543,525		1,653,450			1,382,045		2,524,100	St. John, N.B	798,050		2,440,400	12,109 50					3,000		580,995		85,700	1,382,045		2,524,100
228,910			154,175					383,085			Halifax, N.S	186,560			1,119 36							196,525			383,085		
5,700			8,450					14,150			Pictou, "	14,150			84 90										14,150		
234,610			162,625					397,235			Totals	200,710			1,204 26							196,525			397,235		
1,016,795			3,582,425			988,100		5,587,320			Winnipeg, Man	4,745,575			28,473 45	14,625						827,120			5,587,320		
			20,550			14,625		35,175			Moose Jaw, Sask	23,000			138 00							12,175			35,175		
82,050			537,425					619,475			Calgary, Alta	481,600			2,889 60	101,875						36,000			619,475		
23,150			343,100			101,875		468,125			Vancouver, B.C.	256,175			1,537 05							211,950			468,125		
55,700			440,875					496,575			Victoria "	351,400			2,108 40							145,175			496,575		
78,850			783,975			101,875		964,700			Totals	607,575			3,645 45							357,125			964,700		
24,574,950	84,500	1,163,000	93,224,630	884,450	3,265,785	7,500,900	667,500	125,300,480	968,950	5,096,285	Grand Totals	85,874,755	550,100	3,738,350	528,115 08	7,500,900	10,000	667,500	25,000	29,400	12,875	31,872,550	418,850	665,435	125,300,480	968,950	5,096,285

* Includes 1,200 cigars at $7 per M.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

W. J. GERALD,
Deputy Minister.

No. 23.—Comparative Statement of Warehouse Returns for the Nine Months ended March 31, 1907, and the Fiscal Year ended March 31, 1908.

Dr. Cr.

Remaining in Warehouse from last year.			Warehoused.			Received from other Divisions.			Totals.			Provinces.	Entered for Consumption.				Removed in Bond to other Divisions.					Exported.		Written off.		Re Manufactured.	Remaining in Warehouse.			Totals		
																	Foreign.															
Foreign.	Canadian.	Combination.	Foreign.	Canadian.	Combination.	Foreign.	Canadian.	Combination.	Foreign.	Canadian.	Combination.		Foreign at $6 per M.	Canadian at $3 per M.	Combination at $3 per M.	Duty.	Warehoused in Divisions to which removed.	In Transit.	Warehoused in Divisions to which removed.	Canadian. Warehoused in Divisions to which removed.	Combination. In Transit.	Foreign	Combination	Foreign.	Combination	Foreign.	Foreign.	Canadian.	Combination.	Foreign.	Canadian.	Combination.
No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	1907.	No.	No.	No.	$ cts.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
11,985,540		14,000	24,174,875		8,225	6,314,300		20,000	42,474,715		42,225	Ontario	*27,497,240		42,225	165,113 72	2,498,500									14,425	12,464,550			42,474,715		42,225
9,520,955	105,200	243,940	31,356,995	207,800	1,065,550	165,000	40,500	456,500	41,052,360	353,500	1,765,990	Quebec	26,531,835	228,500	926,300	162,655 41	4,258,950		40,500	476,500		2,500			70,840		10,259,570	84,500	292,350	41,052,860	353,500	1,765,990
567,270		1,321,450	581,875		1,601,000				1,149,145		2,922,450	New Brunswick	696,575		2,026,800	10,259 85						13,000	25,000	1,050			458,930		870,650	1,149,145		2,922,450
281,870			153,469			378,150			435,330			Nova Scotia	206,720			1,204 32											1,016,705			4,477,703		
1,088,315			3,101,040			4,477,705			443,325			Manitoba	3,460,910			20,765 46											82,050			443,325		
92,425			350,900			443,325			468,650			Alberta	361,275			2,167 65											78,850			468,650		
110,100			358,550			468,650						British Columbia	389,800			2,338 80																
23,656,675	105,200	1,579,390	60,087,605	207,800	2,674,775	6,757,450	40,500	476,500	90,501,730	353,500	4,730,665	Totals	59,138,355	228,500	2,995,323	364,505 21	6,757,450		40,500	476,500		15,500	25,000	1,050	70,840	14,425	24,574,950	84,500	1,163,000	90,501,730	353,500	4,730,665
												1908.																				
12,464,550			35,521,280	461,400		6,351,900		40,000	54,337,740	461,400	40,000	Ontario	†37,926,675	412,400	30,000	228,828 45	2,350,300	10,000				17,000		12,875			14,030,890	49,000	10,000	54,337,740	461,400	40,000
10,259,575	84,500	292,350	51,472,810	423,050	1,412,335	41,400		627,500	61,976,790	507,550	2,332,185	Quebec	41,101,570	137,700	1,267,950	290,826 57	5,034,100			667,500	25,000	3,400					15,831,720	369,850	571,735	61,976,790	507,550	2,532,185
438,920		870,650	945,525		1,653,450				1,382,045		2,524,100	New Brunswick	798,050		2,440,400	12,109 50						3,000					580,995		83,700	1,382,045		2,524,100
234,610			162,625						397,235			Nova Scotia	266,710			1,204 26											196,525			397,235		
1,016,705			3,582,425			988,100			5,587,230			Manitoba	4,745,575			28,473 45	14,625										827,120			5,587,320		
			20,550			14,625			35,175			Saskatchewan	23,000			138 00											12,175			35,175		
82,050			537,425			619,475			619,475			Alberta	481,600			2,889 60	101,875										36,000			619,475		
78,850			783,975			101,875			964,700			British Columbia	607,575			3,645 45											357,125			964,700		
24,574,950	84,500	1,163,000	93,224,630	884,450	3,265,785	7,960,900		667,500	125,300,480	968,950	5,096,285	Totals	85,874,755	550,100	3,738,350	528,115 08	7,500,900	10,000		667,500	25,000	29,400		12,875			31,872,550	418,850	665,435	125,300,480	968,950	5,096,285

* Includes 3,600 at $7.90 per M.
† " 1,200 at $7 per M.

	1907.	1908.
Total duty collected, ex-manufactory and ex-warehouse	$ 901,260 10	$ 1,168,727 62
License Fees	11,497 52	15,452 50
Totals	$912,757 62	$ 1,184,180 12

Inland Revenue Department,
Ottawa, June 11, 1908.

W. J. GERALD,
Deputy Minister

Written off.		Re Manufacture.	Remaining in Warehouse.			Totals.		
oreign.	Combination	Foreign.	Foreign.	Canadian.	Combination.	Foreign.	Canadian.	Combination.
No.	No.	No.	No.	No.	No.	No.	No.	No.
.....	.....	14,425	12,464,550	.....	.....	42,474,715	.....	42,[illegible]
.....	70,840	.....	10,259,575	84,500	292,350	41,052,860	353,500	1,765,[illegible]
1,050	.....	.....	438,520	.....	870,650	1,149,145	.....	2,922,[illegible]
.....	.....	.....	234,610	.....	.....	435,330	.....	.....
.....	.....	.....	1,016,795	.....	.....	4,477,705	.....	.....
.....	.....	.....	82,050	.....	.....	443,325	.....	.....
.....	.....	.....	78,850	.....	.....	468,650	.....	.....
1,050	70,840	14,425	24.574,950	84,500	1,163.000	90,501,730	353,500	4,730,665
12,875	.....	.....	14,030,890	49,000	10,000	54,337,740	461,400	40,000
.....	.....	.....	15,831,720	369,850	571,735	61,976,790	507,550	2,532,185
.....	.....	.....	580,995	.....	83,700	1,382,045	.....	2,524,100
.....	.....	.....	196,525	.....	.....	397,235	.....	.....
.....	.....	.....	827,120	.....	.....	5,587,320	.....	.....
.....	.....	.....	12,175	.....	.....	35,175	.....	.....
.....	.....	.....	36,000	.....	.....	619,475	.....	.....
.....	.....	.....	357,125	.....	.....	964,700	.....	.....
12,875	.....	.....	31,872,550	418,850	665,435	125,300,480	968,950	5,096,285

W. J. GERALD,
Deputy Minister

APPENDIX A.—*Continued*—INSPECTION OF PETROLEUM.

No. 24.—RETURN of Petroleum and Naphtha inspected during the Fiscal Year ended March 31, 1908.

DIVISIONS.	LICENSES.		FROM CANADIAN CRUDE.			FROM IMPORTED CRUDE.		
	No.	Fees.	Petroleum.	Naphtha.	Totals.	Petroleum.	Naphtha.	Totals.
		$ cts.	Galls.	Galls.	Galls.	Galls.	Galls.	Galls.
London, Ont	2	2 00	19,051,751·92	3,712,060·16	22,763,812·08	39,488·09	10,770·53	50,258·62
Toronto, "	1	1 00	.....	.....	.....	42,758·98	30,196·23	72,955·21
Totals	3	3 00	19,051,751·92	3,712,060·16	22,763,812 08	82,247·07	40,966 76	123,213·83

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

W. J. GERALD,
Deputy Minister.

No. 25.—Comparative Statement of Petroleum and Naphtha inspected during the Nine Months ended March 31, 1907, and the Fiscal Year ended March 31, 1908.

Provinces.	Licenses.		From Canadian Crude.			From Imported Crude.		
	No.	Fees.	Petroleum.	Naphtha.	Totals.	Petroleum.	Naphtha.	Totals.
1907.		$ cts.	Galls.	Galls.	Galls.	Galls.	Galls.	Galls.
Ontario	2	1 50	12,560,054·42	2,741,705·43	15,301,759·85	57,728·87	6,443·95	64,172·82
1908.								
Ontario	3	3 00	19,051,751·92	3,712,060·16	22,763,812·08	82,247·07	40,966·76	123,213·83

Inland Revenue Department,
Ottawa, June 11, 1908.

W. J. GERALD,
Deputy Minister.

APPENDIX A.—*Continued*—MANUFACTURES IN BOND.

No. 26.—RETURN of Manufactures for the

DIVISIONS.	LICENSES.		MATERIALS USED.			
	No.	Fees.	Spirits.	Beer, Wine, &c.	Nitric Acid.	Mercury.
		$ cts.	Galls.	Galls.	Lbs.	Lbs.
Brantford, Ont.	1	50 00	5,715·94	* 23·10		
Guelph "	1	50 00				
Hamilton "	3	150 00	21,482·59	345·10		
Kingston "	1	50 00	9,846·69	153·15		
Ottawa "	1	50 00	6,458·19	16·60		
Perth "	2	100 00				
Prescott "	1	300 00	269,549·82		1,349,128	142,974
Toronto "	5	225 00	118,039·22	1,186·20		
Windsor "	4	200 00				
Totals	19	1,175 00	431,092·45	* 23·10 1,701·05	1,349,128	142,974
Montreal, Que	11	550 00	42,084·80	312·30		
Quebec "	2	100 00	25,204·70	491·00		
St. Hyacinthe, Que	2	100 00	19,912·44	81·89		
Sherbrooke "	1	300 00	61,720·03		286,884	36,765
Totals	16	1,050 00	148,921·97	885·19	286,884	36,765
St. John, N.B.	2	100 00	14,103·09	202·20		
Winnipeg, Man	2	100 00	38,783·88	618·00		
Vancouver, B.C.	1	50 00	5,638·00	73·20		
Grand Totals	40	2,475 00	638,539·39	* 23·10 3,479·64	1,636,012	179,739

* Malt extract.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

Fiscal Year ended March 31, 1908.

Manufactured.		Paid Duty ex-Manufactory.		Warehoused.		Total Duty Collected ex-Manufactory, including License Fees.
Vinegar.	Crude Fulminate.	Vinegar.	Duty.	Vinegar.	Crude Fulminate.	
Galls.	Lbs.	Galls.	$ cts.	Galls.	Lbs.	$ cts.
31,613·41		31,613·41	1,264 57			1,314 57
						50 00
140,985·40		22,287·59	891 51	118,697 81		1,041 51
70,944·83		12,911·64	516 47	58,033·19		566 47
33,252·84		1,650·64	66 03	31,602·20		116 03
						100 00
	176,303				176,303	300 00
724,316·02		360,171·48	14,406 85	364,144·54		14,631 85
						200 00
1,001,112·50	176,303	428,634·76	17,145 43	572,477·74	176,303	18,320 43
227,281·74		182,627·03	7,305 08	44,654 71		7,855 08
140,313·67		85,975·54	3,439 01	54,338·13		3,539 01
105,191·49		31,400·36	1,256 02	73,791·13		1,356 02
	43,077				43,077	300 00
472,786·90	43,077	300,002·93	12,000 11	172,783·97	43,077	13,050 11
84,744·24		66,208·71	2,648 31	18,535·53		2,748 31
179,467·46		105,497 18	4,219 82	73,970·28		4,319 82
37,275·76		33,033·99	1,321 36	4,241·77		1,371 36
1,775,386·86	219,380	933,377·57	37,335 03	842,009·29	219,380	39,810 03

W. J. GERALD,
Deputy Minister.

APPENDIX A.—*Continued*—MANUFACTURES IN BOND.

No. 27.—Comparative Statement of Manufactures for the Nine

Provinces.	Licenses.		Materials Used.			
	No.	Fees.	Spirits.	Beer, Wines, &c.	Nitric Acid.	Mercury.
1907.		$ cts.	Galls.	Galls.	Lbs.	Lbs.
Ontario	18	862 50	259,581·58	1,435·57	724,809	77,257
Quebec	14	712 50	87,141·36	1,033·90	88,907	11,100
New Brunswick	2	75 00	9,424·82	109·30		
Manitoba	2	75 00	10,844·48	76·00		
British Columbia	1	37 50	5,055·27	84·70		
Totals	37	1,762 50	372,047·51	2,739·47	813,716	88,357
1908.						
Ontario	19	1,175 00	431,092·45	*23·10 1,701·05	1,349,128	142,974
Quebec	16	1,050 00	148,921·97	885·19	286,884	36,765
New Brunswick	2	100 00	14,103 09	202·20		
Manitoba	2	100 00	38,783·88	618·00		
British Columbia	1	50 00	5,638·00	73·20		
Totals	40	2,475 00	638,539·39	*23·10 3,479·64	1,636,012	17[0],739

*Malt extract.

Inland Revenue Department,
Ottawa, June 11, 1908.

Months ended March 31, 1907, and the Fiscal Year ended March 31, 1908.

Manufactured.		Paid Duty ex-Manufactory.		Warehoused.		Total Duty Collected ex-Manufactory, including License Fees.
Vinegar.	Crude Fulminate.	Vinegar.	Duty.	Vinegar.	Crude Fulminate.	
Galls.	Lbs.	Galls.	$ cts.	Galls.	Lbs.	$ cts.
685,303·52	93,475	371,778·85	14,871 22	313,524·67	93,475	15,733 72
363,394·35	13,193	222,130·23	8,885 17	141,264·12	13,193	9,597 67
53,938·61	....	39,883·16	1,595 32	14,055·45	.....	1,670 32
47,120·84	.....	33,215·46	1,328 59	13,905·38	....	1,403 59
32,652·52	.....	27,511·72	1,106 47	5,140·80	.....	1,137 97
1,182,409·84	106,668	694,519·42	27,780 77	487,890·42	106,668	29,543 27
1,001,112 50	176,303	428,634·76	17,145 43	572,477·74	176,303	18,320 43
472,786·90	43,077	300,002·93	12,000 11	172,783·97	43,077	13,050 11
84,744·24	....	66,208·71	2,648 31	18,535·53	....	2,748 31
179,467·46	.....	105,497·18	4,219 82	73,970·28	....	4,319 82
37,275·76	....	33,033·99	1,321 36	4,241·77	.....	1,371 36
1,775,386·86	219,380	933,377·57	37,335 03	842,009·29	219,380	39,810 03

W. J. GERALD,
Deputy Minister.

APPENDIX A.—*Continued*—MANUFACTURES IN BOND.

No. 28.—Warehouse Return for the

Remaining in Warehouse from last year.	Warehoused.		Received from other Divisions.	Totals.		Divisions.
Vinegar.	Vinegar.	Crude Fulminate.	Vinegar.	Vinegar.	Crude Fulminate.	
Galls.	Galls.	Lbs.	Galls.	Galls.	Lbs.	
.....	.....	.....	13,205·69	13,205·69	.....	..Brantford, Ont .....
40,001·42	118,697·81	.....	.....	158,699·23	.....	..Hamilton " .....
16,969·09	58,033·19	.....	.....	75,002·28	.....	..Kingston " .....
4,841·81	31,602·20	.....	.....	36,444·01	.....	..Ottawa " .....
.....	.....	176,303	.....	.....	176,303	..Prescott " .....
137,523·81	364,144·54	.....	.....	501,668·35	.....	..Toronto " .....
199,336·13	572,477·74	176,303	13,205·69	785,019·56	176,303	.....Totals.....
55,076·03	44,654·71	.....	.....	99,730·74	.....	..Montreal, Que.....
22,020·42	54,338·13	.....	.....	76,358·55	.....	..Quebec " .....
31,045·74	73,791·13	.....	11,156·80	115,993·67	.....	..St. Hyacinthe " .....
.....	.....	43,077	.....	.....	43,077	..Sherbrooke " .....
108,142·19	172,783·97	43,077	11,156·80	292,082·96	43,077	.....Totals.....
14,055·45	18,535·53	.....	.....	32,590·98	.....	..St. John, N.B.....
15,365·77	73,970·28	.....	32,429·54	121,765·59	.....	..Winnipeg, Man .....
10,031·83	4,241·77	.....	.....	14,273·60	.....	.Vancouver, B.C.....
346,931·37	842,009·29	219,380	56,792·03	1,245,732·69	219,380	Grand Totals.....

Inland Revenue Department,
Ottawa, June 11, 1908.

Fiscal Year ended March 31, 1908.

Entered for Consumption.		Removed in bond to other Divisions.	Written off.	Exported.	Remaining in Warehouse.	Totals.	
Vinegar.	Duty.	Vinegar	Vinegar.	Crude Fulminate.	Vinegar.	Vinegar.	Crude Fulminate.
Galls.	$ cts.	Galls.	Galls.	Lbs.	Galls.	Galls.	Lbs.
13,205·69	528·22					13,205·69	
112,877·60	4,515·10				45,821·63	158,699·23	
57,769·03	2,310·74				17,233·25	75,002·28	
24,111·86	964·49				12,332·15	36,444·01	
				176,303			176,303
250,520·12	10,020·84	56,792·03			194,356·20	501,668·35	
458,484·30	18,339·39	56,792·03		176,303	269,743·23	785,019·56	176,303
45,379·32	1,815·16				54,351·42	99,730·74	
15,834·01	633·38				60,524·54	76,358·55	
63,556·83	2,542·27		3,882·80		48,554·04	115,993·67	
				43,077			43,077
124,770·16	4,990·81		3,882·80	43,077	163,430·00	292,082·96	43,077
14,055·45	562·23				18,535·53	32,590·98	
63,601·82	2,544·04				58,163·77	121,765·59	
7,428·71	297·15		2,603·12		4,241·77	14,273·60	
668,340·44	26,733·62	56,792·03	6,485·92	219,380	514,114·30	1,245,732·69	219,380

W. J. GERALD,
Deputy Minister.

APPENDIX A.—*Continued*—MANUFACTURES IN BOND.

DR. No. 29.—COMPARATIVE STATEMENT of Warehouse Returns for the Nine

Remaining in Warehouse from last year.	Warehoused.		Received from other Divisions.	Totals.		DIVISIONS.
Vinegar.	Vinegar.	Crude Fulminate.	Vinegar.	Vinegar.	Crude Fulminate.	
Galls.	Galls.	Lbs.	Galls.	Galls.	Lbs.	1907-
106,142·71	313,524·67	93,475	2,608·83	422,276·21	93,475	..Ontario.....
32,054·71	141,264·12	13,193	11,343·20	184,662·03	13,193	..Quebec.....
8,419·91	14,055·45	.....	.....	22,475·36	.....	..New Brunswick.....
9,756·96	13,905·38	.....	11,729·03	35,391·37	.....	..Manitoba.....
10,444·67	5,140·80	.....	.....	15,585·47	.....	..British Columbia.....
166,818·96	487,890·42	106,668	25,681·06	680,390·44	106,668	.....Totals.....
						1908.
199,336·13	572,477·74	176,303	13,205·69	785,019·56	176,303	..Ontario.....
108,142·19	172,783·97	43,077	11,156·80	292,082·96	43,077	..Quebec.....
14,055·45	18,535·53	.....	.....	32,590·98	.....	..New Brunswick.....
15,365·77	73,970·28	.....	32,429·54	121,765·59	.....	..Manitoba.....
10,031 83	4,241·77	.....	.....	14,273·60	.....	..British Columbia.....
346,931·37	842,099·29	219,380	56,792 03	1,245,732·69	219,380	.....Totals.....

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

Months ended March 31, 1907, and the Fiscal Year ended March 31, 1908. Cr.

Entered for Consumption.		Removed in bond to other Divisions.	Written off.	Exported.	Remaining in Warehouse.	Totals.	
Vinegar.	Duty.	Vinegar.	Vinegar.	Crude Fulminate.	Vinegar.	Vinegar.	Crude Fulminate.
Galls.	$ cts.	Galls.	Galls.	Lbs.	Galls.	Galls.	Lbs.
208,602·22	8,344 10	14,337·86	.....	93,475	199,336·13	422,276·21	93,475
64,365·23	2,574 62	11,343·20	811·41	13,193	108,142·19	184,662·03	13,193
8,419·91	336 80	.....	.....	.....	14,055·45	22,475·36	.....
20,025·60	801 03	.....	.....	.....	15,365·77	35,391·37	.....
5,553·64	222 15	.....	.....	.....	10,031·83	15,585·47	.....
306,966·60	12,278 70	25,681·06	811·41	106,668	346,931·37	680,390·44	106,668
458,484·30	18,339 39	56,792·03	.....	176,303	269,743·23	785,019·56	176,303
124,770·16	4,990 81	.....	3,882·80	43,077	163,430·00	292,082·96	43,077
14,055·45	562 23	.....	.....	.....	18,535·53	32,590·98	.....
63,601·82	2,544 04	.....	.....	.....	58,163·77	121,765·59	.....
7,428·71	297 15	.....	2,603·12	.....	4,241·77	14,273·60	.....
668,340·44	26,733 62	56,792·03	6,485·92	219,380	514,114·30	1,245,732·69	219,380

	1907.	1908.
Total duty collected, ex manufactory and ex-warehouse. ...	$ 40,059 47	$ 64,068 65
License Fees	1,762 50	2,475 00
Totals	$ 41,821 97	$ 66,543 65

W. J. GERALD,
Deputy Minister.

APPENDIX A.—*Continued.*—ACETIC ACID.

No. 30.—RETURN of Manufactures for the Fiscal Year ended March 31, 1908.

DIVISIONS.	LICENSES.		MANUFACTURED.	PAID DUTY EX-MANUFACTORY.		Total Duty collected ex-Manufactory, including License Fees.
	No.	Fees.	Acetic Acid.	Acetic Acid.	Duty.	
		$ cts.	Galls.	Galls.	$ cts.	$ cts.
Montreal	2	100 00	80,344·76	80,344·76	3,213 81	3,313 81

W. J. GERALD,
Deputy Minister.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

APPENDIX A.—*Continued.*—ACETIC ACID.

No. 31.—COMPARATIVE STATEMENT of Manufactures for the Nine Months ended March 31, 1907, and the Fiscal Year ended March 31, 1908.

PROVINCES.	LICENSES.		MANUFACTURED.	PAID DUTY EX-MANUFACTORY.		Total Duty collected ex-Manufactory, including License Fees.
	No.	Fees.	Acetic Acid.	Acetic Acid.	Duty.	
1907.		$ cts.	Galls.	Galls.	$ cts.	$ cts.
Quebec	1	37 50	47,674·69	47,674·69	1,907 00	1,944 50
1908.						
Quebec	2	100 00	80,344·76	80,344·76	3,213 81	3,313 81

W. J. GERALD,
Deputy Minister.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

(A)

METHYLATED SPIRITS.

No. 32.—STATEMENT showing the quantity of Raw Materials on hand on April 1, 1907, and March 31, 1908, and brought in during the year ended March 31, 1908.

DR. CR.

Names of Articles.	Stock on hand April 1, 1907.	Brought in during the year.	Total to be Accounted for.	Used in manufacture of Methylated Spirits.	Sold.	Stock on hand March 31, 1908.	Total Accounted for.
	Pr'f galls.	Pr'f galls.	Pr'f galls.	Pr'f galls.	Pr'f galls.	Pr'f galls.	Pr'f galls.
Alcohol.....	5,177·25	87,805·31	92,982·56	86,502·11	.....	6,480·45	92,982·56
Wood Naphtha..	9,098·71	17,847·89	26,946·60	22.300·45	.....	4,646·15	26,946·60

(B)

STATEMENT showing the quantity of Raw Materials used, and Methylated Spirits produced therefrom.

DR. CR.

Alcohol used Statement (A) above.	Wood Naphtha used Statement (A) above.	Methylated Spirits used Statement (C) below.	Total to be Accounted for.	Methylated Spirits produced.	Loss in Manufacture.		Total Accounted for.
Pr'f galls.	Pr'f galls.	Pr'f galls.	Pr'f galls.	Pr'f galls.	Pr'f galls.	p.c.	Pr'f galls.
86,502·11	22,300·45	.....	108,802·56	105,175 92	3,626·64	3·45	108,802·56

(C)

STATEMENT showing the quantity of Methylated Spirits on hand on April 1, 1907, and March 31, 1908, also quantity brought in, manufactured, sold and otherwise accounted for during the year ended March 31, 1908.

DR. CR.

Stock on hand April 1, 1907.	Manufactured as per Statement (B) above.	Brought in during the year.	Total to be Accounted for.	Sold.	Used in Methylated Spirits Warehouse.	Re-used in Manufacture of Methylated Spirits.	Stock on hand March 31, 1908.	Total Accounted for.
Pr'f galls.	Pr'f galls.	Pr'f galls	Pr'f galls.	Pr'f galls.	Pr'f galls.	Pr'f galls.	Pr'f galls.	Pr'f galls.
6,336·33	105,175·92	.....	111,512·25	101,452·40	.....	.....	10,059·85	111,512·25

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

W. J. GERALD,
Deputy Minister.

DR. No. 33.—HYDRAULIC and other Rents, &c., Lessees'

Balances due April 1, 1907.	Rents accrued up to March 31, 1908.	Totals.	Number.	Location.	Original Lessees.	Present Occupants.
$ cts.	$ cts.	$ cts				
	200 00	200 00	1	Ottawa River	Perley & Pattee	J. R. Booth
	100 00	100 00	2	"	"	"
	300 00	300 00	3	"	R. Blackburn *et al*	"
	100 00	100 00	4	"	Mrs. M. Petrie	Ottawa Electric Co
	100 00	100 00	5	"	H. H. Baldwin	"
	300 00	300 00	6	"	Bank of Montreal	Ottawa Electric Ry. Co.
	400 00	400 00	7	"	Perley & Pattee	Ottawa Electric Co
	300 00	300 00	8	"	J. R. Booth	J. R. Booth
	100 00	100 00	9	"	M. W. Merrill	The Ottawa Investment Co
	600 00	600 00	10	"	The Bronson & Weston Lumber Co	The Ottawa Power Co
	200 00	200 00	11	"	Levi Young	Ottawa Elec. Ry. Co.
	104 00	104 00	12	"	J. R. Booth	"
10 00	10 00	20 00	13	"	Bronson & Weston	"
	100 00	100 00	14	"	"	
	96 00	96 00	15	"	Perley & Pattee	J. R. Booth
96 00	8 00	104 00	16	"	L. M. Coutlee	Mary Conroy
570 84		570 84	17	"	John Rochester	
	25 00	25 00	18	"	Nérée Tétreau	Thos. Ahearn
200 00		200 00	19	"	Hon. J. Skead	
96 00		96 00	20	"	"	
	1 00	1 00	21	"	G. A. Grier & Co	Ottawa Investment Co
380 00		380 00	22	"	John Rankin	
	150 00	150 00	23	"	J. R. Booth	
75 00	5 00	80 00	24	"	Colin Dewar	
	50 00	50 00	25	"	Bronson & Weston	
	1 00	1 00	26	"	Alfred Desjardins	
	100 00	100 00	27	"	The Bronson Co	
	10 00	10 00	28	"	Ottawa Electric Co	
	1 00	1 00	1	St. Lawrence	Que. Harb. Comiss'ners	
225 00	25 00	250 00	2	"	Rich. & Ont. Nav. Co	
1 00	1 00	2 00	3	Quebec	Corporation of Quebec	
1 00	1 00	2 00	4	"	Narcisse Blais	
	1 00	1 00	5	Rondeau Harbour	School Trustees	
1 00	1 00	2 00	6	Collingwood	Great Northern Trans. Co	
3 00	1 00	4 00	7	Ottawa	E. G. Laverdure	
	1 00	1 00	8	Three Rivers	Corp. of Three Rivers	
100 00	100 00	200 00	9	"	W. Ritchie	
165 00		165 00	10	British Columbia	A. Peel	
90 00		90 00	11	"	Jonathan Maury	
25 00	25 00	50 00	12	"	Roderick Finlayson	
25 00	25 00	50 00	13	"	Joseph Spratt	
	1 00	1 00	14	"	Bank of British Columbia	
2 00	1 00	3 00	15	"	W. Dodd	
	12 00	12 00	16	"	D. W. Gordon	
5 00		5 00	17	"	S. Williams	
25 00	5 00	30 00	18	"	Geo. A. Huff	
	50 00	50 00	19	"	John Reid	
70 00		70 00	20	Rivière du Lièvre	Dominion Phosphate Co.	
1 00		1 00	21	Charlottetown	Rt. Rev. BishopMcIntyre	Rt. Rev. Bishop McDonald

Accounts for the Year ended March 31, 1908. CR.

Description of Property.	Number.	Date to which Account is made up.	Paid during the year.	Balances due on March 31, 1908.	Totals.
			$ cts.	$ cts.	$ cts.
Lot B and C, Chaudière st. service ground	1	Dec. 31, 1907	200 00	.....	200 00
Lot D	2	" 31, 1907	100 00	.....	100 00
Lots H, I and J, grist mill, North Head st	3	" 31, 1907	300 00	.....	300 00
Lot K, fanning mill, South Head st	4	" 31, 1907	100 00	.....	100 00
Lot L, service ground	5	" 31, 1907	100 00	.....	100 00
Lots Q, R and T, service ground, North Middle st	6	" 31, 1907	300 00	.....	300 00
Lots M, N, O and P, service ground (no water used)	7	" 31, 1907	400 00	.....	400 00
Lots E, F and G, South Head st	8	" 31, 1907	300 00	.....	300 00
Lot S, service ground	9	" 31, 1907	100 00	.....	100 00
Lots U, V, W, X, Y and Z, service ground	10	" 31, 1907	600 00	.....	600 00
Two strips of land	11	" 31, 1908	200 00	.....	200 00
Portion of Govt. Reserve, head of slides	12	Sept. 20, 1908	104 00	.....	104 00
Bridge over slides	13	June 30, 1908	20 00	.....	20 00
Strip of land, Amelia Island	14	Dec. 31, 1908	100 00	.....	100 00
Reserve, head of Chaudière Island	15	" 31, 1908	96 00	.....	96 00
Small island, Deschênes Rapids	16	" 31, 1908	.....	104 00	104 00
Portion of lot 39, Concession 'A,' Nepean	17	" 31, 1884	.....	570 84	570 84
Excavated channel, slide and two dams, Little Chaudière	18	Feb. 28, 1909	25 00	.....	25 00
Water lot, opposite lot 30, Concession 'A,' Nepean	19	Nov. 30, 1891	.....	200 00	200 00
Three small islands, Ottawa River	20	Apr. 30, 1891	.....	96 00	96 00
Covering over portion of Ottawa slides	21	Nov. 10, 1908	1 00	.....	1 00
East portion of Hawley's Island	22	June 30, 1891	.....	380 00	380 00
Piece of land, southwest end of Union Bridge	23	May 12, 1908	150 00	.....	150 00
Piece of land on Victoria Island	24	June 15, 1908	.....	80 00	80 00
Piece of land, south side of Middle st., Victoria Island	25	Aug. 31, 1908	50 00	.....	50 00
Piece of land, Longue Pointe Rouge Templeton, Ottawa County	26	Oct. 24, 1908	1 00	.....	1 00
Southwest of lot No. 1, Amelia Island	27	" 9, 1907	100 00	.....	100 00
Lot Pa, South Head st	28	Jan. 10, 1908	10 00	.....	10 00
Small lot near Custom House, Quebec	1	Aug. 31, 1908	1 00	.....	1 00
Roadway from pier at Coteau Landing	2	June 30, 1908	.....	250 00	250 00
Old Provincial Govt. building grounds, on Mountain Hill	3	" 30, 1908	2 00	.....	2 00
Privilege to erect bridge on St Charles River	4	" 25, 1908	2 00	.....	2 00
Use of old log house, formerly used as Custom House, Shrewsbury, Ont	5	Feb. 6, 1909	1 00	.....	1 00
Use of breakwater for storing coal	6	" 5, 1909	1 00	1 00	2 00
Southeast half of lot 8, Ottawa	7	Dec. 18, 1907	.....	4 00	4 00
Lot of land on Christopher Island, St. Maurice River	8	Nov. 30, 1908	1 00	.....	1 00
Outlet of River St. Maurice	9	June 30, 1907	200 00	.....	200 00
Portion of Assay Office, New Westminster	10	" 30, 1889	.....	165 00	165 00
" "	11	" 30, 1889	.....	90 00	90 00
Privilege to erect two bulkheads, Rock Bay, Victoria Harbour	12	May 31, 1908	50 00	.....	50 00
Privilege to build a wharf on lot A, C	13	" 31, 1908	.....	50 00	50 00
Right of drainage through Govt. property, Nanaimo	14	Nov. 30, 1908	1 00	.....	1 00
Old Government House, Yale	15	July 24, 1907	.....	3 00	3 00
Beach lots A, C, E and F, front of 7, 8, 9, Nanaimo Harbour	16	Aug. 27, 1908	12 00	.....	12 00
Frontage of lot 7, block M, Victoria	17	July 16, 1904	.....	5 00	5 00
Permission to build a wharf on lot A, block 2, Sumas River, Alberni, B.C.	18	Aug. 12, 1908	30 00	.....	30 00
Lot 1, block 13, New Westminster	19	Mar. 12, 1908	50 00	.....	50 00
Permission to erect a landing at Little Rapids, Rivière du Lièvre	20	Apr. 30, 1898	.....	70 00	70 00
Leave to connect drain to main service of public building	21	May 16, 1902	.....	1 00	1 00

8-9 EDWARD VII., A. 1909

DR. No. 33.—HYDRAULIC and other Rents, &c., Lessees'

Balances due April 1, 1907.	Rents accrued up to March 31, 1908.	Totals.	Number.	Location.	Original Lessees.	Present Occupants.
$ cts.	$ cts.	$ cts.				
.....	16 00	16 00	22	Antigonish, N.S....	L. C. Archibald.....	.....
1 00	1 60	2 00	23	Owen Sound.....	G. T. Railway.....	.....
240 00	.....	240 00	24	Windsor.....	Archie McNee.....	.....
5 00	5 00	10 00	25	Bayfield, N.S.....	Charles L. Gass.....	.....
1 00	1 00	2 00	26	"	"	.....
5 00	5 00	10 00	27	Village of Brook....	William Pedwell.....	.....
.....	1 00	1 00	28	Walkerton, Ont. ...	D. Robinson & J. Rowland	.....
.....	1 00	1 00	29	.....	Can. Pac. Ry. Co.	.....
.....	5 00	5 00	30	County of Grey, Ont.	Jacob Duke Spiers.. ...	.....
.....	1 00	1 00	31	Lévis, Que.....	Cyrille Robitaille.....	.....
2,418 84	3,647 00	6,065 84				

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

SESSIONAL PAPER No. 12

Accounts for the Year ended March 31, 1908. CR.

Description of Property.	Number.	Date to which Account is made up.	Paid during the year.	Balances due on March 31, 1908.	Totals.
			$ cts.	$ cts.	$ cts.
Tract of land and water lot, McNair's Cove	22	Dec. 31, 1908	16 00	.....	16 00
Lot of land west side of Sydenham River	23	" 31, 1908	2 00	.....	2 00
Lot on Ouellette st., Windsor, Ont	24	" 30, 1900	.....	240 00	240 00
Water lot	25	" 7, 1908	.....	10 00	10 00
"	26	June 8, 1908	.....	2 00	2 00
"	27	Mar. 31, 1909	5 00	5 00	10 00
Right of way over strip of land	28	Apr. 27, 1909	1 00	.....	1 00
Portion of Custom House lot, New Westminster	29	" 14, 1908	1 00	.....	1 00
Water lot	30	" 8, 1908	5 00	.....	5 00
Ground rent	31	" 4, 1908	1 00	.....	1 00
			3,739 00	2,326 84	6,065 84

W. J. GERALD,
Deputy Minister.

DR. No. 33 (A)—HYDRAULIC and other Rents, &c.—

Balances due on April 1, 1907.	Totals.	Number.	Location.	Name of Proprietors.
$ cts.	$ cts.			LAND SALES—PRINCIPAL ACCOUNT.
12,092 83	12,092 83	1	Hamilton and Port Dover Road..	Choat & Kern
433 34	433 34	2	Bonner's property, Quebec.....	Timothy Sullivan, now M. Murphy...
333 34	333 34	3		John Bailey, now Alex. Powell.....
300 00	300 00	4		Abraham Thompson
147 80	147 80	5		John Boomer
248 40	248 40	6		John Garbatz, Now J. C. Nolan
154 80	154 80	7		N. H. Bowen
600 00	600 00	8		Estate Robert Reid
333 33	333 33	9		John Chevalier
533 33	533 33	10		Daniel Holden
333 33	333 33	11		George Creeley
63 00	63 00	12		Thomas McAdam
15,573 50	15,573 50			LAND SALES—INTEREST ACCOUNT.
6,298 25	6,298 25	1	Hamilton and Port Dover Road..	Choat & Kern (matured)
558 00	558 00	2	Bonner's property, Quebec.....	Timothy Sullivan, now M. Murphy...
120 00	120 00	3		John Bailey, now Alex. Powell.....
306 00	306 00	4		Abraham Thompson
155 22	155 22	5		John Boomer
275 82	275 82	6		John Garbatz, now J. C. Nolan
208 95	208 95	7		N. H. Bowen
828 00	828 00	8		Estate Robert Reid
190 00	190 00	9		John Chevalier
298 68	298 68	10		Daniel Holden
35 91	35 91	11		George Creeley
100 00	100 00	12		Thomas McAdam
100 00	100 00	13		Joseph Brook, tenant
9,474 83	9,474 83			

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

A—*Concluded.*

—Lessees' Accounts, 1907–1908—*Concluded.* Cr.

Description of Property.	Number.	Date to which the account is made up.	Balances due on March 31, 1908.	Totals.
			$ cts.	$ cts.
Hamilton and Port Dover and Caledonia Bridge	1		12,092 83	12,092 83
Lot No. 1, Wolfe Street	2		433 34	433 34
" 9 "	3		333 34	333 34
" 49 "	4		300 00	300 00
" 73 and 74, Tower Street	5		147 80	147 80
" 64, Wolfe Street, and 211 and 252 Ware Street	6		248 40	248 40
" 67 and 68, Monument Street	7		154 80	154 80
" 22 and 23, Wolfe Street	8		600 00	600 00
" 32, Wolfe Street	9		333 33	333 33
" 65 and 66, Wolfe Street	10		533 33	533 33
" 31, Wolfe Street	11		333 33	333 33
" 135, Church Street	12		63 00	63 00
			15,573 50	15,573 50
	1	June 30, 1874	6,298 25	6,298 25
Lot No. 1, Wolfe Street	2	May 1, 1889	558 00	558 00
" 9 "	3	"	120 00	120 00
" 49 "	4	"	306 00	306 00
" 73 and 74, Tower Street	5	"	155 22	155 22
" 64, Wolfe Street, and 211 and 252 Ware Street	6	"	275 82	275 82
" 67 and 68, Monument Street	7	"	208 95	208 95
" 22 and 23, Wolfe Street	8	"	828 00	828 00
" 32, Wolfe Street	9	Nov. 1, 1863	190 00	190 00
" 65 and 66, Wolfe Street	10	"	298 68	298 68
" 31, Wolfe Street	11	"	35 91	35 91
" 135, Church Street	12	"	100 00	100 00
Monument Hotel	13	"	100 00	100 00
			9,474 83	9,474 83

W. J. GERALD,
Deputy Minister.

APPENDIX B.

No. 1.—Details of Excise Expenditures for the Year ended March 31, 1908.

To whom paid.	Service.	Deductions for			Amounts paid.	Total amounts paid.
		Retirement.	Superannuation.	Guarantee		
	Belleville.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Iler, B	Salary as Collector for the year		46 47	7 20	2,271 27	
Standish, J. G	" Special Class Exciseman for the year		36 00	4 32	1,759 68	
Pole, C. W	" Deputy Collector for the year.		33 96	3 60	1,662 36	
McCoy, W	" Special Class Exciseman for the year		27 96	4 32	1,367 64	
McCuaig, A. F	" Deputy Collector for the year		19 92	2 88	977 16	
Blyth, A	" 1st Class Exciseman for the year	58 11		2 88	1,101 48	
Brown, W. J	" " " "	58 11		2 88	1,101 48	
Wilson, H. R	" 3rd " "	42 99		2 88	814 71	
Cook, W. J	" 3rd Class Exciseman from Jan. 1 to Mar. 31, 1908	6 25		0 24	118 51	
Sprague, F. W	" " " "	6 25		0 24	118 51	
	Salaries	171 71	164 31	31 44	11,292 80	
	Contingencies				2,202 75	
						13,495 55
	Brantford.					
O'Donohue, M. J	Salary as Collector for the year		35 37	7 20	1,727 37	
Sloan, W	" Deputy Collector for the year.	64 96		3 60	1,231 44	
Orr, H. N	" 1st Class Exciseman for the year		41 61	2 88	1,144 56	
Newsome, I	" 3rd " "	42 99		2 88	814 71	
Schuler, F. C	" Probationary Exciseman from April 1 to July 13, 1907, and 3rd Class from July 14, 1907, to Mar. 31, 1908	28 56		2 88	540 03	
Dowling, D. J	" 3rd Class Exciseman from Jan. 1 to Mar. 31, 1908	6 24		0 72	118 02	
	Salaries	142 75	76 98	20 16	5,576 13	
	Contingencies				1,508 61	
						7,084 74
	Cornwall.					
Mulhern, M. M	Salary as Collector for the year		23 37	3 60	1,142 97	
	Contingencies				93 83	
						1,236 80
	Guelph.					
Powell, J. B	Salary as Collector for the year		48 00	7 20	2,344 80	
Till, T. M	" Deputy Collector for the year.		34 04	3 60	1,662 36	
Dawson, W	" Special Class Exciseman for the year		36 60	4 32	1,759 68	
Woodward, G. W.	" " " "		28 64	4 32	1,367 64	
Broadfoot, S	" Accountant for the year		27 90	4 32	1,362 78	
Spence, F. H	" 1st Class Exciseman for the year		24 00	2 88	1,173 12	
Bowman, A	" " " "		24 00	2 88	1,173 12	
Egener, A	" " " "		24 00	2 88	1,173 12	
O'Brien, E. C	" 2nd " "		19 96	2 88	977 16	
Alteman, P. J	" 1st " "		40 65	2 88	1,118 94	
Howie, A	" 3rd " "		16 96	2 88	830 16	
Coutts, J. J	" 1st " "	58 11		2 88	1,101 48	
Hanlon, J. R	" 2nd " "	42 99		2 88	814 71	

APPENDIX B.—No. 1.—Details of Excise Expenditures for the Year ended March 31, 1907—*Continued.*

To whom paid.	Service.	Deductions for			Amounts paid.	Total amounts paid.
		Retirement.	Superannuation.	Guarantee		
	Guelph—Con.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Martin, W	Salary as 2nd Class Exciseman from April 1 to Dec. 31, 1907, and 1st Class from Jan. 1 to Mar. 31, 1908	44 34		2 88	840 24	
Thomas, F. W	" 3rd Class Exciseman for the year	42 99		2 88	814 71	
	Salaries	188 43	323 55	52 56	18,514 02	
	Contingencies				1,094 77	
						19,608 79
	Hamilton.					
Miller, W. F	Salary as Collector for the year		48 00	14 40	2,337 60	
Cameron, D. M	" Special Class Exciseman for the year			4 32	1,495 68	
Baby, W. A. D	" " " "		36 00	4 32	1,759 68	
O'Brien, J	" Deputy Collector for the year	85 04		7 20	1,607 76	
Crawford, W. P	" Accountant from April 1 to April 30, 1907, and suspended from May 1, 1907			0 36	124 64	
O'Brien, J. F	" Special Class Exciseman for the year		26 19	4 32	1,281 96	
Dumbnille, R. W	" 1st Class Exciseman for the year		24 00	2 88	1,173 12	
Hobbs, G. N	" 1st Class Exciseman from April 1 to May 5, 1907, and promoted to Accountant from May 6, 1907, to Mar. 31, 1908		24 00	4 17	1,171 83	
Hayhurst, T. H	" 1st Class Exciseman for the year	58 11		2 88	1,101 48	
Boyd, J. F. S	" " "		40 65	2 88	1,118 94	
Logan, J	" 2nd Class Exciseman from April 1 to April 30, 1907. Died April 13; off May 1, 1907		1 66	0 24	81 43	
Amor, W	" 2nd Class Exciseman for the year		19 96	2 88	977 16	
Bishop, J. B	" " " "	49 11		2 88	931 05	
Cheseldine, J. H	" 1st " "	58 11		2 88	1,101 48	
Lawlor, J. J	" 1st " "	58 11		2 88	1,101 48	
Elliott, W. J	" 3rd " "	42 99		2 88	814 71	
Kirkpatrick, H. J	" 3rd " "	42 99		2 88	814 71	
Beasley, M. C	" Probationary Exciseman from April 1 to July 13, 1907, and 3rd Class from July 14, 1907, to Mar. 31, 1908	28 56		2 88	540 03	
Ballentine, A., jr	" " "	28 56		2 88	540 03	
Blackman, C	" Messenger for the year	36 81			700 68	
Hiscott, J. O	" Probationary Exciseman from July 2 to Dec. 31, 1907, and 3rd Class from Jan. 1 to Mar. 31, 1908	19 89		2 15	376 29	
Mitchell, J. L	" Probationary Exciseman from Jan. 1 to Mar. 31, 1908	6 24		0 72	118 02	
	Salaries	514 52	220 46	73 88	21,269 76	
	Contingencies				734 93	
						22,004 69

APPENDIX B.—No. 1.—Details of Excise Expenditures for the Year ended March 31, 1908—*Continued.*

To whom paid.	Service.	Deductions for Retirement.	Deductions for Superannuation.	Deductions for Guarantee	Amounts paid.	Total amounts paid.
	Kingston.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Dickson, C. T	Salary as Collector for the year			7 20	1,792 80	
Grimason, T.	" Deputy Collector for the year		25 96	3 60	1,270 44	
Hanley, A.	" Accountant "		19 96	2 88	977 16	
Lyons, E.	" 1st Class Exciseman "		24 00	2 88	1,173 12	
O'Donnell, J.	" Messenger "		16 96	2 88	830 16	
Fahey, E.	" 3rd Class Exciseman "		16 65	2 88	812 97	
Hogan, J.	" 3rd " "	34 83		2 88	659 79	
Montgomery, W. H	" 3rd " "	42 99		2 88	814 71	
	Salaries	77 82	103 53	28 08	8,331 15	
	Contingencies				1,022 66	
						9,353 81
	London.					
Alexander, T.	Salary as Collector for the year			7 20	2,392 80	
Spereman, J. J.	" Special Class Exciseman for the year		31 96	4 32	1,563 72	
Davis, T. G.	" Deputy Collector for the year.		34 04	3 60	1,662 36	
Thrasher, W. A.	" " "	85 04		3 60	1,611 36	
Rose, J. A.	" " "	64 96		3 60	1,231 44	
Coles, F. H.	" Accountant "		2 30	4 32	1,388 38	
Wilson, D.	" " "		24 00	2 88	1,173 12	
Lee, E.	" 1st Class Exciseman "		24 00	2 88	1,173 12	
Girard, I.	" 1st " "		24 00	2 88	1,173 12	
Boyle, P.	" 1st " " (Insurance)	71 76	36 00	2 88	1,089 36	
Foster, H.	" 1st Class Exciseman for the year		40 65	2 88	1,118 94	
Webbe, C. E. A.	" 2nd " "		19 96	2 88	977 16	
Tracey, J. P.	" 2nd " "		19 96	2 88	977 16	
Talbot, J.	" 3rd " "	42 36		2 88	802 23	
Whitehead, J. P.	" Deputy Collector for the year	32 48		2 88	614 64	
Fiddes, J.	" " "	30 00		2 88	567 12	
Pleasance, W.	" 3rd Class Exciseman "	31 08		2 88	588 54	
Fleming, C.	" 3rd " "	31 83		2 88	602 79	
Tyther, J. M.	" Stenographer and Typewriter from Sept. 12, 1907, to Mar. 31, 1908	11 02			210 07	
Stanley, F. C.	" 3rd Class Exciseman from Jan. 1 to March 31, 1908	6 24		0 72	118 02	
	Salaries	406 77	256 87	61 92	21,035 45	
	Contingencies				1,063 97	
						22,099 42
	Ottawa.					
Freeland, A.	Salary as Collector for the year	90 00		7 20	1,702 80	
McGuire, T.	" Deputy Collector for the year	64 96		3 60	1,231 44	
Slattery, R.	" 1st Class Exciseman "		24 00	2 88	1,173 12	
Fox, T.	" 1st " "		22 96	2 88	1,124 16	
Hinchey, E. H.	" Accountant "		19 96	4 32	975 72	
Bennett, J.	" Deputy Collector "	45 00		2 88	852 12	
Laporte, G.	" " "		17 10	2 88	838 32	
Casey, J.	" 3rd Class Exciseman from April 1 to May 1, 1907.	2 75		0 24	52 01	
Noonan, J. M.	" Probationary Exciseman from Feb. 4 to March 31, 1908	6 24		0 48	118 26	
Winsor, J. A.	" Deputy Collector Class "B", from Feb. 4 to Mar. 31, 1908	1 57		0 45	29 57	
	Salaries	210 52	84 02	27 81	8,097 52	
	Contingencies				647 82	
						8,745 34

APPENDIX B.—No. 1.—Details of Excise Expenditures for the Year ended March 31, 1908—*Continued.*

To whom paid.	Service.	Deductions for			Amounts paid.	Total amounts paid.
		Retirement.	Superannuation.	Guarantee		
	Owen Sound.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Graham, W. J.	Salary as Collector for the year	.....	.....	3 60	1,596 36	
Johnson, J. J.	" 1st Class Exciseman for the year	.....	23 19	2 88	1,136 40	
Chisholm, W. N.	" Deputy Collector for the year	.....	22 04	3 60	1,074 36	
McFee, A. C.	" 1st Class Exciseman "	.....	38 85	2 88	1,070 70	
Cryderman, C. W.	" Deputy Collector "	41 22	.....	2 88	780 84	
	Salaries	41 22	84 08	15 84	5,658 66	
	Contingencies	.....	.....	.....	525 01	
						6 183 67
	Perth.					
McLenaghan, N.	Salary as Collector for the year	79 96	.....	7 20	1,512 84	
Mason, F.	" Special Class Exciseman for the year	.....	.....	4 32	1,733 13	
Goodman, A. W.	" 1st " "	.....	24 00	2 88	1,173 12	
Noonan, H. T.	" Deputy Collector for the year	44 16	.....	3 60	837 21	
Clarke, T.	" " "	42 52	.....	2 88	804 60	
Rowan, W. E.	" " "	25 04	.....	2 88	472 08	
Egan, W.	" " "	.....	.....	2 88	419 27	
Baikie, D.	" " "	25 04	.....	3 60	471 36	
George, J.	" " "	15 00	.....	2 88	282 12	
Maurice, E.	" " "	19 96	.....	2 88	377 16	
Publow, W. J.	" Probationary Exciseman from Jan. 6 to March 31, 1908	6 24	.....	0 72	118 02	
	Salaries	257 92	24 00	36 72	8,200 91	
	Contingencies	.....	.....	.....	1,037 18	
						9,238 09
	Peterborough.					
Rudkins, W.	Salary as Collector for the year	69 24	.....	3 60	1,312 14	
Rork, T.	" Deputy Collector for the year.	49 96	.....	3 60	946 44	
Howden, R.	" " " from April 1 to Dec. 31, 1907	.....	11 97	2 16	585 81	
Bickle, J. W.	" Deputy Collector for the year.	.....	13 96	2 88	683 16	
Wood, H. M.	" " " from Jan. 6 to March 31, 1908	7 49	.....	0 68	133 76	
	Salaries	126 69	25 93	12 92	3,661 31	
	Contingencies	.....	.....	.....	296 35	
						3,957 66
	Port Arthur.					
Ironside, G. A.	Salary as Collector from April 1 to Oct. 1, 1907	.....	.....	1 80	578 16	
Bridgman, M. W.	" 2nd Class Exciseman from April 1, 1907, to Feb. 24, 1908, and Collector from Feb. 25 to March 31, 1908	42 99	.....	2 94	814 65	
Aaron, J. D.	" Deputy Collector for the year.	7 44	.....	2 88	139 68	
Barnes, G.	" " from Aug. 1, 1907, to March 31, 1908	20 00	.....	1 92	378 08	
Smith, B. H.	" Deputy Collector from Jan. 6 to March 31, 1908	2 82	.....	0 24	53 38	
	Salaries	73 25	.....	9 78	1,963 95	
	Contingencies	.....	.....	.....	509 79	
						2,473 74

APPENDIX B.—No. 1.—Details of Excise Expenditure for the Year ended March 31, 1908—*Continued.*

To whom paid.	Service.	Deductions for Retirement.	Deductions for Superannuation.	Deductions for Guarantee	Amounts paid.	Total Amounts paid.
	Prescott.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Keilty, T.	Salary as Collector for the year	....	42 00	7 20	2,050 80	
Gerald, W. H.	" Special Class Exciseman for the year	.....	36 00	4 32	1,759 68	
Macdonald, A. B.	" " "	....	28 04	4 32	1,367 64	
Melville, T. R.	" Deputy Collector for the year.	78 72	.....	3 60	1,492 68	
Keeler, G. S.	" 2nd Class Exciseman "	.....	19 96	2 88	977 16	
Wood, J. A.	" Deputy Collector "	.....	.....	2 88	897 12	
White, J. B.	" " " "	34 96	.....	2 88	662 16	
Marshall, I. N.	" 3rd Class Exciseman "	36 36	.....	2 88	688 26	
McPherson, E. A.	" 2nd " " from April 1 to Dec. 31, 1907, and 1st Class from Jan. 1 to March 31, 1908	44 34	.....	2 88	795 60	
	(Insurance)	44 64				
Byrne, W. P.	" Probationary Exciseman from April 1 to Aug. 30, 1907, and Confirmed 3rd Class Exciseman from Sept. 1, 1907, to March 31, 1908	27 66	.....	2 88	523 02	
	Salaries	266 68	126 00	36 72	11,214 12	
	Contingencies	.....	.....	.....	831 17	
						12,045 29
	St Catharines.					
Hesson, C. A.	Salary as Collector for the year	.....	28 04	7 20	1,364 76	
Johnston, H. J.	" Deputy Collector for the year.	49 96	.....	2 88	947 16	
Milliken, E.	" 2nd Class Exciseman "	.....	19 96	2 88	977 16	
Schram, R. L. H.	" 2nd " " "	.....	34 38	2 88	945 78	
Simpson, W. A.	" 1st " " "	55 59	.....	2 88	1,053 96	
	Salaries	105 55	82 38	18 72	5,288 82	
	Contingencies	.....	.....	.....	391 46	
						5,680 28
	Stratford.					
Rennie, G.	Salary as Collector for the year	.....	36 00	7 20	1,756 80	
	(Insurance)	47 28	.....	3 60	1,159 14	
Tobin, T. S.	" Deputy Collector for the year.	63 66				
Hicks, W. H.	" " " "	.....	19 96	2 88	977 16	
Young, R. E.	" 1st Class Exciseman "	58 11	.....	2 88	1,101 48	
Jefferys, A. J.	" Deputy Collector "	45 00	.....	2 88	852 12	
Dalton, M. J.	" " " "	40 58	.....	3 60	768 09	
	Salaries	254 63	55 96	23 04	6,614 79	
	Contingencies	.....	.....	.....	332 35	
						6,947 14
	Toronto.					
Frankland, H. R.	Salary as Collector for the year	120 00	.....	14 40	2,265 60	
Gerald, C.	" Special Class Exciseman for the year	.....	36 00	4 32	1,759 68	
Henderson, W.	" Deputy Collector for the year	.....	34 04	3 60	1,662 36	
Boomer, J. B.	" Accountant "	....	30 00	4 32	1,465 68	
Mackenzie, J. H.	" Deputy Collector "	85 04	.....	3 60	1,611 36	
Metcalf, W. F.	" Special Class Exciseman for the year	.....	28 04	4 32	1,367 64	
Boyd, S. I.	" Deputy Collector for the year	...	24 00	2 88	1,173 12	

APPENDIX B.—No. 1.—Details of Excise Expenditures for the year ended March 31, 1908—*Continued.*

To whom paid.	Service.	Deductions for			Amounts paid.	Total amounts paid.
		Retirement.	Superannuation.	Guarantee		
	Toronto—Con.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Dick, J. W.	Salary as Special Class Exciseman for the year		28 04	4 32	1,367 64	
			28 04	4 32	1,367 64	
Evans, G. T.	" " "					
Jamieson, R. C.	" " "		30 00	4 32	1,465 68	
Flynn, D. J.	" " "		27 24	4 32	1,330 92	
Shanacy, M.	" Deputy Collector for the year		22 04	2 88	1,075 08	
Elliott, T. H.	" " (Insurance)	41 76 57 52		2 88	1,047 84	
Dudley, W. H.	" 1st Class Exciseman from April 1 to Sept. 1, 1907		10 00	1 80	488 20	
Coleman, C.	" Deputy Collector for the year		19 96	2 88	977 16	
Helliwell, H. N.	" 1st Class Exciseman for the year		24 00	2 88	1,173 12	
O'Leary, T. J.	" 1st " "		24 00	2 88	1,173 12	
Graham, W. T.	" 1st " "		24 00	2 88	1,173 12	
Doyle, B. J.	" 1st " "		24 00	2 88	1,173 12	
Cook, W. R.	" 1st " "		24 00	2 88	1,173 12	
Howard, W. W. S.	" 1st Class Exciseman from Apr. 1, 1907, to Mar. 1, 1908		22 00	2 64	1,075 36	
Hurst, L. B	" Special Class Exciseman for the year		25 04	4 32	1,220 64	
Wardell, R. S. R.	" 1st Class Exciseman for the year		42 00	2 88	1,155 12	
Barber, J. S	" 2nd " "		19 96	2 88	977 16	
Murray, A. E.	" 2nd " "		19 96	2 88	977 16	
Dager, H. J	" Deputy Collector for the year	45 00		2 88	852 12	
Coulter, A.	" Asst. Accountant "		42 00	2 88	1,155 12	
Ritchie, H.	" Deputy Collector "	51 18		2 88	970 89	
Jones, A.	" 3rd Class Exciseman for the year		16 96	2 88	830 16	
Falconer, R. H.	" 1st " "	58 11		2 88	1,101 48	
Graham, A. L.	" 1st " "	58 11		2 88	1,101 48	
Burns, R. J.	" 1st " "	58 11		2 88	1,101 48	
Mahoney, H	" 1st " "	48 11		2 40	911 96	
Gillies, A. L.	" 1st " "	55 59		2 88	1,053 96	
Walsh, W. H.	" 2nd " "	50 55		2 88	959 04	
Fielding, L. G.	" Stenographer "	23 55			448 92	
Brentnall, F. F.	" Deputy Collector "	56 85		2 88	1,077 72	
	Salaries	809 48	625 32	126 36	43,260 97	
	Contingencies				1,897 77	
						45,158 74
	Windsor.					
McSween, J	Salary as Collector for the year		46 47	14 40	2,264 07	
Bouteiller, G. A.	" Special Class Exciseman for the year		36 00	4 32	1,759 68	
Marion, H. R.	" Deputy Collector for the year	85 04		7 20	1,667 76	
Dunlop, C.	" " "		25 96	3 60	1,270 44	
Brennan, J.	" Special Class Exciseman for year		28 04	4 32	1,367 64	
Belleperche, A. J. E	" Accountant for the year	69 75		4 32	1,320 93	
Keogh, P. M.	" Deputy Collector for the year		19 96	3 60	976 44	
Thomas, R.	" 1st Class Exciseman for the year		24 00	2 88	1,173 12	
Bayard, G. A.	" 1st " "		24 00	2 88	1,173 12	
Brain, A. F.	" 1st " "		41 79	2 88	1,149 69	
Berry, H. L.	" 1st " (Insurance)	71 16 58 11		2 88	1,027 32	
Jubenville, J. P.	" 2nd " "		19 96	2 88	977 16	

APPENDIX B.—No. 1.—Details of Excise Expenditure for the year ended March 31, 1908—*Continued.*

To whom paid.	Service.	Deductions for Retirement.	Deductions for Superannuation.	Deductions for Guarantee	Amounts paid.	Total Amounts paid.
	Windsor—Con.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Falconer, J.	Salary as 3rd Class Exciseman for the year	.....	16 96	2 88	830 16	
Cahill, J. W.	" 3rd " "	.....	16 96	2 88	830 16	
Neil, Jas.	" 1st " "	58 11	.....	2 88	1,101 48	
Chilver, F. W.	" 1st Class Exciseman from April 1 to July 1, 1907	14 37	.....	0 72	272 40	
McArthur, G. A.	" Special Class Exciseman for the year	62 48	.....	4 32	1,183 20	
Beneteau, S.	" 1st Class Exciseman for the year	55 59	.....	2 88	1,053 96	
Adam, A. R.	" 3rd " "	34 83	.....	2 88	659 79	
Love, G. G.	" 3rd " "	42 99	.....	2 88	814 71	
Bergeron, R. J.	" Probationary 3rd Class from April 1 to April 16, 1907, and confirmed 3rd Class from April 17, 1907, to March 31, 1908	29 77	.....	2 88	562 89	
Cummiford, F. D.	" Probationary 3rd Class from Jan. 1 to March 31, 1908	6 24	.....	0 72	118 02	
	Salaries	591 44	300 10	82 08	23,494 14	
	Contingencies	.....	.....	.....	1,791 48	
						25,285 62
	Joliette.					
Labelle, L. V.	Salary as Collector for the year	90 00	.....	3 60	1,706 40	
Gow, J. E.	" Special Class Exciseman for the year	58 11	30 24	4 32	1,477 92	
Bernier, J. A.	" 1st " "	42 52	.....	2 88	1,101 48	
Daveluy, J. P.	" 3rd " "	37 44	.....	3 60	804 60	
Ralston, P.	" Deputy Collector "	52 45	.....	3 60	708 96	
Gamache, J. N.	" Deputy Collector Class "B" from April 1 to April 11, 1907, and Deputy Collector Class "A" from April 11, 1907, to March 31, 1908	34 08	.....	2 88	1,183 88	
Olivier, H.	" Probationary Exciseman for the year	10 04	.....	3 60	645 54	
Forest, M.	" Deputy Collector for the year				186 36	
Bourgeois, C.	" 3rd Class Exciseman "	30 72	.....	2 88	581 40	
	Salaries	365 36	30 24	30 24	8,396 54	
	Contingencies	.....	.....	.....	1,034 77	
						9,431 31
	Montreal.					
Toupin, J. A.	Salary as Collector for the year	.....	46 47	14 40	2,264 07	
Caven, W.	" Deputy Collector for the year	.....	34 04	7 20	1,658 76	
Forest, E. R.	" Accountant "	.....	28 96	7 20	1,413 84	
Fox, J. D.	" " "	.....	30 00	4 32	1,465 68	
Lane, T. M.	" " "	.....	25 96	2 88	1,271 16	
Walsh, D. J.	" Special Class Exciseman for the year	.....	31 68	4 32	1,551 45	
Scullion, W. J.	" 2nd " "	.....	24 00	2 88	1,173 12	
Normandin, G.	" Special " "	58 11	.....	2 88	1,101 48	
Chagnon, C. P.	" Deputy Collector "	49 96	.....	7 20	942 84	
Dumouchel, L.	" 2nd Class Exciseman "	.....	19 96	2 88	977 16	
Courtney, J. J.	" 2nd " "	.....	19 96	2 88	977 16	
Verner, F.	" 2nd " from April 1 to Sept. 1, 1907	.....	8 30	1 20	407 15	

APPENDIX B.—No. 1.—Details of Excise Expenditures for the year ended March 31, 1908—*Continued.*

To wham paid.	Service.	Deductions for			Amounts paid.	Total amounts paid.
		Retirement.	Superannuation.	Guarantee		
	Montreal—Con.	$ cts.	$ cts	$ cts.	$ cts.	$ cts.
Dixon, H. G. S...	Salary as 2nd Class Exciseman for the year		19 96	2 88	977 16	
Andrews, A. A...	" 2nd " "		34 96	2 88	962 16	
Codd, H. J. S....	" 2nd " "		19 96	2 88	977 16	
Renaud, A. H....	" 1st " "		40 65	2 88	1,118 94	
Desaulniers, J. E. A	" 1st " "	58 11		2 88	1,101 48	
Laurier, J. L	" 2nd " "	49 11		2 88	931 05	
Snowden, J. W...	" 1st " "	62 48		4 32	1,183 20	
Millier, E	" 3rd " "		16 96	2 88	830 16	
Panneton, G. E...	" 3rd " "		16 96	2 88	830 16	
Costigan, J. J....	" 3rd " "		16 60	2 88	810 52	
O'Flaherty, E. J..	" 3rd " "		16 96	2 88	830 16	
Brabant, J. B. G. N.	" 3rd " "		19 54	2 88	955 08	
Bélair, A. P.....	" 3rd " "		16 96	2 88	830 16	
Ryan, W.....	" 3rd " "	42 52		2 88	804 60	
Mainville, C. P...	" 3rd " "		16 96	2 88	830 16	
Comte, L. A. A. J.	" 2nd " "		34 30	2 88	940 32	
Kearney, D. J....	" 1st " "	58 11		2 88	1,101 48	
Bousquet, J. O....	" 1st " "	58 11		2 88	1,101 48	
Lambert, J. A....	" 2nd " "	49 11		2 88	931 05	
Maranda, N. A...	" 3rd " "	38 61		2 88	731 01	
David, T.....	" 3rd " "	50 55		2 88	959 04	
Harwood, J. O. A.	" 2nd " "	49 11		2 88	931 05	
Patterson, C. E. A.	" Deputy Collector "	37 68		3 60	713 59	
Marin, L. H.....	" 3rd Class Exciseman "	37 08		2 88	702 54	
Gauvin, E.....	" 2nd " from April 1 to April 30, 1907	4 07		24	77 14	
St. Michel, F. X..	" Deputy Collector for the year	25 04		3 60	471 36	
Lamoureux, J. A..	" 2nd Class Exciseman "	47 22		2 88	895 44	
Crevier, J. H. ...	" 3rd " "	33 36		2 88	631 26	
Longtin, H.....	" 2nd " "	50 55		2 88	959 04	
Thurber, G.....	" 3rd " "	32 22		2 88	609 90	
Milot, J. F.....	" 3rd " "	42 99		2 88	814 71	
Ledoux, A.....	" Stenographer "	23 55		2 88	446 04	
Graveline, D. P...	" 3rd Class Exciseman "	30 00		2 88	567 12	
Gariepy, L. N....	" Probationary 3rd Class from April 1 to July 13, 1907, and confirmed 3rd Class from July 14, 1907, to March 31, 1908	28 56		2 88	540 03	
O'Donnell, M. J..	" Messenger for the year	36 33			691 11	
McGuire, L. J....	" 2nd Class Exciseman from May 1, 1907, to March 31, 1908	46 39		2 64	880 11	
Hudon, M. L. E..	" Deputy Collector Class "A" from June 1, 1907, to March 31, 1908		43 70	6 00	1,200 30	
L'Esperance, J. A	" Probationary 3rd Class from Oct. 1, 1907, to March 31, 1908	12 48		1 44	236 04	
Gervais, J. A.....	" Probationary 3rd Class from January 17 to March 31, 1908	6 24		0 72	118 02	
Marin, N. H.....	" 3rd Class Exciseman from March 12 to March 31, 1908	1 88		0 15	35 60	
	Salaries	1,119 53	583 80	169 35	46,460 80	
	Contingencies				6,767 93	
						53,228 73

APPENDIX B.—No. 1.—Details of Excise Expenditures for the Year ended March 31, 1908—*Continued.*

To whom paid.	Service.	Deductions for			Amounts paid.	Total amounts paid.
		Retirement.	Superannuation.	Guarantee		
	Quebec.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Arcand, D.	Salary as Collector for the year	100 04		7 20	1,892 76	
Cahill, J. H.	" Deputy Collector for the year			3 60	1,696 32	
Patry, J. H.	" " "	85 04		3 60	1,611 36	
Taylor, G. W.	" Special Class Exciseman for the year		34 68	4 32	1,698 45	
Coleman, J. J.	" 1st Class Exciseman for the year		24 00	2 88	1,173 12	
LaRue, A.	" 1st " "		34 67	3 60	954 47	
Bourget, O.	" 2nd " "		17 13	2 88	840 57	
Lemoine, J.	" 3rd " "		16 96	2 88	830 16	
Beaulieu, J. B.	" 3rd " "		29 49	2 88	813 21	
Pelletier, N. G.	" Deputy Collector for the year	25 04		3 60	471 36	
Timmons, R.	" 2nd Class Exciseman for the yr.	50 55		2 88	959 04	
Murray, D.	" 1st " "		24 00	2 88	1,173 12	
Rouleau, C. E.	" 3rd " "	30 72		2 88	581 40	
Guay, A. E.	" 3rd " "	29 95		2 88	566 33	
Martineau, O. E. J.	" 3rd " "	29 94		2 88	566 06	
Poitras, W.	" Probationary 3rd Class from April 1, to July 13, 1907 and confirmed 3rd Class from July 14, 1907, to March 31, 1908.	28 56		2 88	540 03	
Courchesne, P. H. E	" Deputy Collector for the year.	10 04		1 80	188 16	
	Salaries	389 88	180 93	56 52	16,555 92	
	Contingencies				7,059 80	
						23,606 72
	St. Hyacinthe.					
	(Ins.)	58 56				
Benoit, L. V.	Salary as Collector for the year	89 49		7 20	1,634 73	
Brennan, D. J.	" Special Class Exciseman for the year		25 96	4 32	1,269 72	
Fortier, J. J. O.	" Deputy Collector for the year		19 96	2 88	977 16	
	(Ins.)	137 04				
Bernard, N. J. D.	" 1st Class Exciseman for the yr	55 59		2 88	916 92	
Langelier, F.	" Deputy Collector "	56 85		3 60	1,077 00	
Poirier, J. N.	" " "		28 04	2 88	769 08	
Deland, A. N.	" " "	40 04		3 60	756 36	
	(Ins.)	54 48				
Dumaine, J. D.	" 1st Class Exciseman for the yr.	53 07		2 88	952 05	
Rouleau, J. C.	" " "	53 07		2 88	1,006 53	
McGuire, L. J.	" 2nd Class from April 1 to May 1, 1907	4 16		0 24	78 93	
Tétreault, J.	" Deputy Collector for the year	7 44		3 60	138 96	
Portelance, P. A.	" " "	4 96		1 80	93 24	
Desmarais, H. F.	" " "	4 73		3 46	87 88	
Gauvin, E.	" 2nd Class Exciseman from May 1, 1907, to March 31, 1908.	45 04		2 64	853 91	
	Salaries	664 52	73 96	44 86	10,612 47	
	Contingencies				3,054 98	
						13,667 45
	Sherbrooke.					
Simpson, A. F.	Salary as Collector for the year		36 00	7 20	1,756 80	
Quinn, J. D.	" Special Class Exciseman for the year		28 04	4 32	1,367 64	
Chartier, E.	" Deputy Collector for the year	64 96		3 60	1,231 44	
Bowen, F. C.	" 3rd Class Exciseman "	42 52		2 88	804 60	
deGrosbois, C. B.	" " "	39 33		2 88	745 29	

APPENDIX B.—No. 1.—Details of Excise Expenditures for the Year ended March 31, 1908—*Continued.*

To whom paid.	Service.	Deductions for			Amounts paid.	Total amounts paid.
		Retirement.	Superannuation.	Guarantee		
	Sherbrooke—Con.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Rousseau, E. H...	Salary as Deputy Collector for the year	34 96	....	3 60	661 44	
	Salaries.....	181 77	64 04	24 48	6,567 21	
	Contingencies.....	... ..	.....	.....	809 82	
						7,377 03
	Three Rivers.					
Hebert, C. D.....	Salary as Collector for the year.....	.....	28 04	3 60	1,368 36	
Duplessis, C. Z. ..	" Deputy Collector for the year	.....	19 96	3 60	976 44	
Auger, L. H.....	" 3rd Class Exciseman "	34 08	.....	2 88	645 54	
Morrissette, F. R.	" Deputy Collector from April 1, to May 1, 1907.....	0 41	.....	0 15	7 77	
Dontigny, H.....	" Deputy Collector from June 4, 1907, to March 31, 1908...	4 06	.....	1 48	76 92	
	Salaries.....	38 55	48 00	11 71	3,075 03	
	Contingencies..	.....	.....	.....	255 36	
						3,330 39
	St. John.					
Belyea, T. H.....	Salary as Collector for the year.	.....	36 00	7 20	1,756 80	
Clarke, J. A.....	" Deputy Collector for the year	.....	25 96	3 60	1,270 44	
McCloskey, J. R..	" Special Class Exciseman for the year.....	.....	25 04	4 32	1,220 64	
Fitzpatrick, W. J.	" 1st Class Exciseman for the year.....	.....	24 00	2 88	1,173 12	
Geldart, O. A.....	" Special Class Exciseman for the year..	....	25 04	4 32	1,220 64	
Ferguson, J. C....	" 1st Class Exciseman for the year.....	....	23 19	2 88	1,136 40	
McGowan. J.....	" 2nd Class Exciseman from April 1 to Dec. 31, 1907 and 1st Class from Jan. 1, to March 31, 1908.....	44 34	.....	2 88	840 24	
Dibblee, W.	" Deputy Collector for the year	.....	3 72	2 88	293 40	
Dwyer, D. T.....	" " "	10 04	..... .	3 60	186 36	
Casey, F. J.....	" Probationary 3rd Class from Jan. 1 to March 31, 1908....	6 24	....	0 72	118 02	
Farmer, R. C.....	" Probationary 3rd Class from Jan. 1 to March 31, 1908....	6 24	.... ..	0 72	118 02	
	Salaries	66 86	162 95	36 00	9,334 08	
	Contingencies	....	.....	.....	1,144 52	
						10,478 60
	Halifax.					
Grant, H. H.....	Salary as Collector for the year	.....	40 04	7 20	1,952 76	
King, R. M..	" Deputy Collector for the year.	.....	30 00	3 60	1,466 40	
James, T. C.....	" Accountant "	... .	24 00	4 32	1,171 68	
Carroll, D.	" 1st Class Exciseman "	....	24 00	2 88	1,173 12	
Blethen, C. W....	" 1st " " "	... .	24 00	2 88	1,173 12	
Hubley, H. H....	" 1st " " "	.....	23 19	2 88	1,136 40	
Gorman, A. M....	" 1st " " "	.....	23 19	2 88	1,136 40	
Tompkins, P.....	" 3rd " " "	.....	16 96	2 88	830 16	
Hagarty, P.....	" 3rd " " from April 1 to May 24, 1907, off June 1, 1907.....	....	.....	0 48	141 18	

APPENDIX B.—No. 1.—Details of Excise Expenditures for the Year ended March 31, 1908—*Continued.*

To whom paid.	Service.	Deductions for Retirement.	Deductions for Superannuation.	Deductions for Guarantee	Amounts paid.	Total amounts paid.
	Halifax—Con.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Munro, H. D.	" 3rd Class Exciseman for the year.	.....	16 96	2 88	830 16	
Waddell, S. J.	" Deputy Collector for the year.	22 18	.....	3 60	419 10	
	Salaries	22 18	222 34	36 48	11,430 48	
	Contingencies	.....	.....	.....	716 53	
						12,147 01
	Pictou.					
Fraser, P.	Salary as Collector for the year.	.....	23 37	3 60	1,142 97	
McDonald, A. J.	" Deputy Collector for the year.	40 04	.....	2 88	757 08	
Carroll, F. P.	" 3rd Class Exciseman "	37 08	.....	2 88	702 54	
	Salaries	77 12	23 37	9 36	2,602 59	
	Contingencies	.....	.....	.....	364 19	
						2,966 78
	Charlottetown.					
Nash, S. C.	Salary as Collector for the year.	.....	.....	3 60	1,396 32	
Moore, T.	" Deputy Collector for the year.	.....	19 96	2 88	977 16	
	Salaries	.....	19 96	6 48	2,373 48	
	Contingencies	.....	.....	.....	106 60	
						2,480 08
	Winnipeg.					
Gosnell, T. S.	Salary as Collector for the year.	.....	48 00	7 20	2,344 80	
Code, A.	" Deputy Collector for the year.	.....	33 72	3 60	1,650 12	
Long, W. H. A.	" Accountant "	65 25	.....	4 32	1,235 43	
Hawkins, W. L.	" " "	.....	24 00	4 32	1,171 68	
Girdlestone, R. J. M	" Deputy Collector from April, 1, 1907, to March 17, 1908.	....	19 12	2 76	937 75	
Verner, T. H.	" 1st Class Exciseman for the year.	....	40 65	2 88	1,118 94	
LaRivière, A. C.	" 1st " " "	.	40 65	2 88	1,118 94	
Sparling, J. W.	" Deputy Collector "	49 96	.....	2 88	947 16	
Barnes, G	" " from April 1 to July 31, 1907	10 00	.....	0 96	189 04	
Earl, R. W.	" Deputy Collector for the year.	53 07	.....	2 88	1,006 53	
Hammond, T. W.	" 3rd Class Exciseman "	32 22	.....	2 88	609 90	
Morris, T. H.	" 3rd " " "	32 22	.....	2 88	609 90	
Jeffreys, E. J.	" 3rd " " from April 1 to June 15, 1907	5 13	.....	0 59	97 04	
Ross, H. E.	" Deputy Collector from April 1 to May 31, 1907.	.....	1 98	0 48	64 20	
Jameson, S. B.	" Deputy Collector from April 1 to June 1, 1907	.....	1 50	0 48	48 02	
McNiven, J. D.	" Deputy Collector for the year.	17 48	.....	2 88	329 64	
Parkin, M. R.	" Probationary 3rd Class from March 2, to March 31, 1908.	2 01	.....	0 24	38 06	
	Salaries	267 34	209 62	45 11	13,517 15	
	Contingencies	.....	.....	.....	3,243 14	
						16,760 29

APPENDIX B.—No. 1.—Details of Excise Expenditures for the Year ended March 31, 1908—*Continued.*

To whom paid.	Service.	Deductions for			Amounts paid.	Total amounts paid.
		Retirement.	Superannuation.	Guarantee		
	Calgary.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Saucier, X.	Salary as Collector for the year	.....	33 44	3 60	1,632 96	
Fletcher, R. W.	" Deputy Collector for the year.	51 70	.....	3 60	979 65	
Harbottle, N.	" " "	49 96	.....	3 60	946 44	
Walker, J. H.	" " "	15 00	.....	2 88	282 12	
Kenny, J.	" " from April 1 to July 31, 1907	6 64	.....	1 20	125 48	
Shaw, F. D.	" Deputy Collector from Aug. 1, 1907, to March 31, 1908	13 29	.....	2 10	251 25	
	Salaries	136 59	33 44	16 98	4,217 90	
	Contingencies	.....	.....	.....	4,123 17	
						8,341 07
	Moose Jaw.					
Conklin, W. M.	Salary as Collector for the year	70 04	.....	3 60	1,326 36	
Ross, H. E.	" Deputy Collector from June 1, 1907, to March 31, 1908	.....	9 90	2 40	321 00	
Jameson, S. B.	" Deputy Collector from June 1, 1907, to March 31, 1908	.....	9 13	2 40	295 11	
Goudie, D. A.	" Deputy Collector from Aug. 19, 1907, to March 31, 1908	24 70	.....	2 22	467 65	
	Salaries	94 74	19 03	10 62	2,410 12	
	Contingencies	.....	.....	.....	2,029 89	
						4,440 01
	Vancouver.					
Miller, J. E.	Salary as Collector from April 1 to Dec. 31, 1907	.....	27 00	5 40	1,317 60	
Allen, G. A.	" Special Class Exciseman for the year	.....	33 72	4 32	1,649 40	
Parkinson, E. B.	" Deputy Collector from April 1 to Dec. 31, 1907, and Collector from Jany. 1 to Mch. 31, 1908	71 19	.....	4 50	1,349 28	
McCraney, H. P.	" Deputy Collector for the year	46 23	.....	3 60	875 16	
Swannell, F. W.	" " " from April 1 to May 1, 1907	45 00	.....	2 70	852 30	
Power, J. F	" Accountant from April 1 to June 30, 1907, and Deputy Collector class "A" from July 1, 1907, to Mch. 31, 1908	51 72	.....	4 32	978 93	
Wolfenden, W.	" Deputy Collector for the year	40 04	.....	3 60	756 36	
Thorburn, J	" 3rd Class Exciseman "	38 61	.....	2 88	731 01	
McCutcheon, H.M	" Deputy Collector "	30 00	.....	3 60	566 40	
Hodder, W. E.	" " " "	30 00	.....	3 60	566 40	
Howell, T.	" " " "	25 04	.....	3 60	471 36	
Marrion, A. H.	" 3rd Class Exciseman "	32 22	.....	2 88	609 90	
Deeley, F.	" 2nd " " from Apr. 1 to Dec. 31, 1907, and 1st Class from Jany. 1 to Mch. 31, 1908	44 34	.....	2 88	840 24	
Gray, R. S.	" Deputy Collector for the year	34 96	.....	2 88	662 16	
Keay, W. S.	" " " "	22 43	.....	3 60	423 94	
Parson, C. H.	" " " "	10 04	.....	3 60	186 36	
MacGregor, D. C.	" " " "	10 04	.....	3 60	186 36	
Morgan, E. J.	" 3rd Class Exciseman from June 19, 1907, to Mch. 31, 1908	20 98	.....	2 16	396 97	

APPENDIX B.—No. 1.—Details of Excise Expenditures for the Year ended March 31, 1908—*Continued.*

To whom paid.	Service.	Deductions for			Amounts paid.	Total amounts paid.
		Retirement.	Superannuation.	Guarantee		
	Vancouver—Con.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Chilver, F. W.	Salaries as 1st Class Exciseman from July 1, 1907, to Mch. 31, '08	14 04	.....	2 16	815 04	
	(Insurance)	43 74				
Gilpin, R. R.	" Deputy Collector from Sept. 7, 1907, to March 31, 1908	2 79	.....	1 05	52 80	
Scanlan, T. J.	" Deputy Collector from May 1, 1907, to March 31, 1908	15 00	.....	0 90	284 10	
	Salaries	628 41	60 72	67 83	14,572 07	
	Contingencies	.....	.....	.....	5,136 56	
						19,708 63
	Victoria.					
Jones, R.	Salary as Collector for the year	.....	36 00	7 20	1,756 80	
O'Sullivan, D.	" Deputy Collector for the year	.....	45 52	3 60	1,250 88	
Henwood, G.	" 1st Class Exciseman "	.....	24 00	2 88	1,173 12	
Ridgman, A. H.	" 1st " " "	.....	40 65	2 88	1,118 94	
McAloney, J. A.	" Deputy Collector from April 1, 1907, to Feby. 1, 1908	16 60	.....	3 00	313 70	
Huggett, A. P.	" Probationary 3rd Class Jany. 1 to March 31, 1908	6 24	.....	0 72	118 02	
Shaw, J.	" Deputy Collector from Feby. 24, to March 31, 1908	2 01	.....	0 36	37 85	
	Salaries	24 85	146 17	20 64	5,769 31	
	Contingencies	.....	.....	.....	2,081 59	
						7,850 90
	Yukon.					
Macdonald, J. F.	Salary as Collector for the year	50 00	.....	7 20	942 80	942 80
	Contingencies	.....	.....	.....	.....	.....

APPENDIX B.—No. 1.—Details of Excise Expenditures for the Year ended March 31, 1908.—*Continued.*

To whom paid.	Service.	Deductions for			Amounts paid.	Total amounts paid.
		Retirement.	Superannuation.	Guarantee		
	DISTRICT INSPECTORS.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
	Ontario.					
Dingman, N. J.	Salary for the year		50 00	9 00	2,441 00	
	Contingencies				625 40	
						3,066 40
Stratton, W. C.	Salary for the year			9 00	2,491 00	
	Contingencies				374 24	
						2,865 24
Kenning, J. H.	Salary for the year			9 00	2,491 00	
	Contingencies				297 35	
						2,788 35
	Quebec.					
Lawlor, H.	Salary for the year		50 00	9 00	2,441 00	
	Contingencies				338 15	
						2,779 15
Rinfret, C. I.	Salary for the year	125 00		9 00	2,366 00	
	Contingencies				277 74	
						2,643 74
	New Brunswick.					
Burke, T.	Salary for the year		50 00	9 00	2,441 00	
	Contingencies				546 20	
						2,987 20
	Manitoba.					
Barrett, J. K.	Salary for the year		50 00	9 00	2,441 00	
	Contingencies				2,192 95	
						4,633 95
	British Columbia.					
Gill, W.	Salary from April 1 to Dec. 31, 1907			6 75	1,868 22	
Miller, J. E.	" " January 1 to March 31, 1908		10 50	2 25	512 25	
	Contingencies				415 74	
						2,796 21
	Inspector of Bonded Factories.					
Stratton, W. C.	Salary for the year				300 00	
	Contingencies				133 04	
						433 04
	Inspector of Breweries and Malt Houses.					
Barrett, J. K.	Salary for the year		6 00		294 00	
	Contingencies				326 55	
						620 55
	Inspector of Distilleries.					
Kenning, J. H.	Salary for the year				300 00	
	Contingencies				167 98	
						467 98
	Inspector of Tobacco Factories.					
Lawlor, H.	Salary for the year		6 00		294 00	
	Contingencies				69 00	
						363 00

APPENDIX B.—No. 1.—Details of Excise Expenditures for the Year ended March 31, 1908—*Continued.*

To whom paid.	Service.	Amounts paid.	Total amounts paid.
	General Contingencies.	$ cts.	$ cts.
American Bank Note Co.	To pay for stamps and labels supplied	69,577 78	
British American Bank Note Co	To pay for bottling labels	9,193 00	
Gerald, W. H	Travelling expenses	150 66	
Harrison & Co	6 metal wine stills, glass jars, repairs, &c	462 65	
The Burrow, Stewart & Milne Co., Ltd.	Testing scales	228 00	
Oertling, L.	364 brass seals, case and packing	225 60	
Thornton & Trueman	Locks and keys and general repairs	124 10	
Negretti & Zambra	100 chemical thermometers	256 15	
The Canadian Rubber Co.	Rubber tubing	85 92	
The Capital Planing Mill	Lumber	80 40	
Dring & Fage	1 set Tralles alcohol meters	36 30	
Dr. Pardee, E	Examination report *re* eye sight, Mr. Burke	10 00	
Gillespie & Co	1½ barrels fusil oil, 62c.; package, $2.50	3 12	
Lyman Sons & Co.	Flasks, jars and condensers	2 49	
The Pritchard & Andrews Co	Rubber pads, rollers, daters, stamps and repairs	220 33	
Collector of Customs	Customs duties paid on imported goods	94 96	
Canadian Pacific Ry Co.	Freight	20 62	
Canadian Express Co.	Express charges	45 70	
Dominion Express Co.	"	51 64	
Grand Trunk Ry. Co.	Freight	0 89	
Graves Bros	Hardware supplies	1 16	
Mahoney, James	Cartage	6 50	
Whitehead, Mrs. J	Cleaning storerooms, &c	157 00	
	Total general contingencies		81,034 97
	Law Costs.		
McHarg, W. H.	Law costs in *re* Rex *vs.* Wak Yick	20 00	
	" " H. Smith	26 00	
	" " F. Riggs	20 00	
	" " Mary Quinn	25 85	
	" " L. Sarazin	20 00	
	" " Oikawa	20 00	
	" " Ket Chung	20 00	
	" " Hai Hing	20 00	
	" " Tom Lee	20 85	
	" " Gin Lee	20 00	
	" " J. Ket	20 00	
			232 70
Brassard, E.	" " A. Manelli	20 00	
	" " J. Dervizet	40 00	
	" " Aug. Lacombe	20 00	
	" " P. Derway	40 00	
	" " T. Lieberman,	14 00	
	" " L. J. C Labelle	10 00	
			144 00
Leduc, J. D	Law costs in *re* Rex *vs.* Israel Horrik,		27 60
Cleary & Buchanan	" " G. Zieppieri		20 00
Carroll, W. F.	" " M. Nolan		19 25
Killam & Farris	" " W. Davies		35 00
MacIlrieth, R. T.	" " W. Rankin		15 00
Lane & Cantin	" " E. Cloutier		21 80
Hoaglin, Mrs. Anna B.	Law costs to refund amount paid by her in *re* Calgary seizure, No. 2		3 00
	Total for law costs		518 35

APPENDIX B.—No. 1.—Details of Excise Expenditures for the Year ended March 31, 1908—*Continued.*

To whom paid.	Service.	Amounts paid.	Total amounts paid.
	Provisional Allowance.	$ cts.	$ cts.
Parkinson, E. B. Winnipeg.	To pay Barrett, P.	124 92	
	" Hammond, T. W.	124 92	
	" Lévêque, J. T.	124 92	
	" Morris, T. H.	124 92	
	" Nichol, F. A.	124 92	
	" Oddson, L.	93 69	
	" Sparling, J. W.	49 92	
	" Earl, R. W.	6 24	
	" Jeffreys, E. J.	10 40	
	" McNiven, J. D.	6 24	
	" Carballis, H. J.	88 49	
	" Parkin, M. R.	10 41	
Saucier, F. X. Calgary.	" Costello, P. J.	52 10	
	" Graham, J. G.	59 03	
	" Baltz, G. O.	56 25	
	" Dalgetty, James.	31 25	
	" Walker, J. H.	75 00	
	" Gray, W. B.	50 04	
	" Harbottle, N.	49 99	
	" Schofield, J. H.	50 00	
	" Fletcher, R. W.	6 24	
	" Loux, Allan.	5 21	
	" Dobbie, W. M.	69 41	
	" Bruce, G. B.	58 29	
	" Libbey, J. J.	18 75	
Conklin, W. M. Moose Jaw.	" Ross, H. E.	125 00	
	" Chisholm, F. W.	50 00	
	" Davies, D. B.	50 00	
	" Knipfel, Dr. J. E.	50 00	
	" Russ, D.	50 00	
	" Goudie, D. A.	46 21	
	" Earle, R. R.	75 00	
	" Gray, R. S.	125 00	
Miller, J. E. Vancouver.	" Marrion, A. H.	116 61	
	" Morgan, E. J.	124 96	
	" Templeton, W. A.	124 94	
	" Thorburn, J.	124 91	
	" Deely, F.	75 00	
	" Wolfenden, W.	74 99	
	" Bailey, E. R.	50 04	
	" Delahay, W.	45 87	
	" Hodder, W. E.	45 87	
	" Meyer, F. A.	45 84	
	" McCraney, H. P.	50 01	
	" Parson, C. H.	50 01	
	" Power, J. F.	37 50	
	" MacGregor, D. C.	4 17	
	" Hall, F. J.	124 94	
Jones, R. Victoria.	" McAloney, J. A.	62 50	
	" Johnston, G.	46 88	
	" Huggett, A. P.	67 85	
	" Shaw, John.	12 . 0	
	Total for provisional allowance.		3,328 15

APPENDIX B.—No. 1.—Details of Excise Expenditures for the Year ended March 31, 1908—*Continued.*

To whom paid.	Place of Residence.	Service.	Amounts paid.	Total amounts paid.
		Commission to Customs Officers.	$ cts.	$ cts.
Ross, W. T.	Picton, Ont.	From April 1, 1907 to March 31, 1908.	64 31	
Fraser, R.	Trenton, Ont.	" " "	196 40	
Allison, J. B.	Napanee, Ont.	" " "	196 40	
McKenzie, W.	North Bay, Ont.	" " "	246 40	
Britton, W. H.	Gananoque, Ont.	" " "	146 40	
Blair, Alexander.	Chicoutimi, Que.	" " "	246 40	
Martel, Louis	Thetford Mines, Que.	" " "	246 40	
English, J. J.	Maple Creek, N. B.	" " "	9 46	
Ratchford, C. E.	Amherst, N. S.	" " "	131 47	
Boyd, A.	Antigonish, N. S.	" " "	76 55	
McPherson, Joseph.	North Sydney, N.S.	" " "	104 36	
McDonald, J. Fred.	New Glasgow, N.S.	" " "	246 40	
Watson, Geo.	Collingwood, Ont.	" " "	136 15	
Kavanagh, A. J.	Gaspé, Que.	" " "	146 40	
Pound, J. T.	Morden, Man.	" " "	146 40	
Gilhuly, R. H.	Selkirk, Man.	" " "	146 40	
Ray, G. R.	York Factory, Man.	" " "	30 29	
Macpherson, M. J.	Kincardine, Ont.	" " "	15 05	
Brown, Geo.	Meaford, Ont.	" " "	146 40	
Watt, Geo.	Chatham, N. B.	" " "	196 40	
Street, A. F.	Fredericton, N. B.	" " "	246 40	
Park, W. A.	Newcastle, N.B.	" " "	146 40	
Anderson, J. J.	Sackville, N. B.	" " "	146 40	
Kirk, J. T.	Sussex, N. B.	" " "	113 15	
Daly, James.	Campbellford, Ont.	" " "	146 40	
Lownsborough, W.	Lindsay, Ont.	" " "	146 40	
Ferguson, J. D.	Saskatoon, Man.	July 19, 1906, to March 31, 1907	184 80	
Brodeur, S. A.	Valleyfield, Que.	April 1, 1907 to July 17, 1907	72 22	
Gilpin, R. R.	Grand Fork, B. C.	July 1, 1906, to March 31, 1907.	69 32	
Watson, E. J. R.	Medicine Hat, Alta,	April 1, 1907, to June 10, 1907	37 60	
Porter, N.	Simcoe, Ont.	January 1, 1908, to March 31, 1908.	77 68	
St. Onge, U.	Valleyfield, Que.	July 18, 1907, to March 31, 1908	174 56	
Ferguson, J. D.	Saskatoon, Man.	April 1, 1907, to February 11, 1908.	209 47	
Brodeur, S. A.	Valleyfield, Que.	Guarantee from April 1,'07, to July 17,'07	1 07	
Watson, E. J. R.	Medicine, Hat, Alta.,	" " to June, 1907	0 90	
Beauchesne, P. C.	Paspébiac, Que.	" " to March 31, 1908.	3 60	
Kavanagh, A. J.	Gaspé, Que.	" " "	3 60	
Blair, A.	Chicoutimi, Que.	" " "	3 60	
Allison, J. B.	Napanee, Ont.	" " "	3 60	
Britton, W. H.	Gananoque, Ont.	" " "	3 60	
Fraser, R.	Trenton, Ont.	" " "	3 60	
McKenzie, G.	Moose Factory, Ont.	" " "	3 60	
McKenzie, W.	North Bay, Ont.	" " "	3 60	
Ross, W. T.	Picton, Ont.	" " "	3 60	
Valleau, A. S.	Deseronto, Ont.	" " "	3 60	
Anderson, J. J.	Sackville, N. B.	" " "	3 60	
Binney, J. W.	Moncton, N. B.	" " "	3 60	
Boyd, A.	Antigonish, N. S.	" " "	3 60	
Clark, A. J.	Campobello, N. B.	" " "	3 60	
Kirk, J. T.	Sussex, N. B.	" " "	3 60	
McDonald, J. F.	New Glasgow, N. S.	" " "	3 60	
McPherson, J.	North Sydney, N.S.	" " "	3 60	
Nadeau, N.	Clair, N. B.	" " "	3 60	
Park, W. A.	Newcastle, N. B.	" " "	3 60	
Ratchford, C. E.	Amherst, N. S.	" " "	3 60	
Street, A. F.	Fredericton, N.B.	" " "	3 60	
Veniot, P. J.	Bathurst, N.B.	" " "	3 60	
Watt, G.	Chatham, N. B.	" " "	3 60	
Daly, Jas. A.	Campbellford, Ont.	" " "	3 60	
Cauchon, A.	Lake Megantic, Que.	" " "	3 60	

APPENDIX B.—No. 1.—Details of Excise Expenditures for the Year ended March 31, 1908—*Continued.*

To whom paid.	Place of Residence.	Service.	Amounts paid.	Total amounts paid.
		Commission to Custom Officers.	$ cts.	$ cts.
Martel, L.	Thetford Mines, Que.	Guarantee from Apl. 1, '07, to Mar. 31, '08	3 60	
Lownsborough, W.	Lindsay, Ont.	" " "	3 60	
McPherson, M. J.	Kincardine, Ont	" " "	3 60	
Stanley, T. B.	St. Mary's, Ont.	" " z	3 60	
Tyson, A. M.	Wiarton, Ont.	" " "	3 60	
Watson, G.	Collingwood, Ont	" " "	3 60	
Brown, G.	Meaford, Ont	" " "	3 60	
Ray, G. R.	York Factory, Man.	" " "	3 60	
Ross, A. D.	Dawson, Y. T.	" " "	3 60	
Campbell, G.	Moyie City, B.C.	" " "	3 60	
Conway, T. D.	Ladysmith, B. C.	" " "	3 60	
Douglas, H	Banff, Alberta.	" " "	3 60	
English, J. J.	Maple Creek, Alta.	" " "	3 60	
Gardner, W.	Fort McLeod, Alta.	" " "	3 60	
Gilhuly, R. H.	Selkirk, Man.	" " "	3 60	
Mather, T. J.	Gretna, Man	" " "	3 60	
Pound, J. T.	Morden, Man.	" " "	3 60	
Bell, A.	Princeton, B. C.	" " "	3 60	
Stevenson, J. K.	Moosejaw, Alta.	" " "	3 60	
White, H.	Cranbrook, B. C.	" " "	3 60	
Jackson, H. B.	Rainy River, Man.	" Aug. 1, 1907, to March 31, 1908	2 40	
Marsh, R. J. F.	Fort Francis, Man.	" " "	2 40	
Porter, N.	Simcoe, Ont	" Jan. 1, 1908, to March 31, 1908	0 90	
St. Onge, U.	Valleyfield, Que.	" July 17, 1907, to March 31, 1908	2 53	
Marsh, R. J. F.	Fort Francis, Man.	" April 1, 1907, to July 31, 1907	1 20	
Walton, E. J. R.	Medicine Hat, Alta.	" " Aug. 16, 1907	1 35	
McLean, W. J.	" "	" Aug. 16, 1907, to March 31, 1908	2 25	
Jackson, H. B.	Rainy River, Man.	" April 1, 1907, to July 31, 1907	1 20	
Ferguson, J. D.	Saskatoon, Man.	" " Feb. 10, 1908	3 10	
McGowan, W. J.	Weyburn, Sask	" Nov. 18, 1907, to March 31, 1908	1 33	4,827 87
		Commission on Tobacco Stamps.		
Grignon, A	St. Eustache, Q.	Allowance of 5 p.c. on sale of stamps.		1 31

APPENDIX B.—No. 1.—Details of Excise Expenditures for the Year ended March 31, 1908—*Continued.*

To whom paid.	Service.	Amounts paid.	Total amounts paid.
	Duty-pay.	$ cts.	$ cts.
Bouteiller, G. A	From April 1, 1907, to March 31, 1908	200 00	
McArthur, G. A	" "	150 00	
Brennan, John	" "	100 00	
Blain, A. F	" "	100 00	
Thomas, R	" "	100 00	
Bayard. G. A	" "	100 00	
Falconer, J. E	" "	100 00	
Adam, A. R	" "	100 00	
Cahill, J. W	" "	100 00	
Keogh, P. M	" "	100 00	
Bergeron, R. J	" "	100 00	
Chilver, F. W	" "	125 00	
Gerald, Chs	" "	200 00	
Jamieson, R. C	" "	200 00	
Hurst, L. B	" "	100 00	
O'Leary, T. J	" "	100 00	
Doyle, B. J	" "	100 00	
Graham, W. T	" "	100 00	
Coulter, A	" "	100 00	
Jones, A	" "	100 00	
Dawson, W	" "	200 00	
Howie, Alex	" "	150 00	
Woodward, G. W	" "	100 00	
Martin, N	" "	100 00	
Egener, A	" "	100 00	
Thomas, F. W	" "	100 00	
Baby, W. A. D	" "	150 00	
O'Brien, J. F	" "	150 00	
Bishop, J. B	" "	100 00	
Hayhurst, T. H	" "	100 00	
Standish, J. G	" "	150 00	
Brown, W. J	" "	150 00	
Blyth, A	" "	150 00	
Wilson, H. R	" "	100 00	
Lally, J. E	" "	100 00	
Cook, W. J	" "	100 00	
Gerald, W. H	" "	200 00	
Macdonald, A. B	" "	150 00	
Keeler, G. S	" "	100 00	
McPherson, E. A	" "	100 00	
Bissell, C. H	6 "	100 00	
Byrne, W. P	" "	100 00	
Mason, F	" "	100 00	
Goodman, A. W	" "	100 00	
Walsh, D. J	" "	200 00	
Snowden, J. W	" "	100 00	
Davidson, J	" "	100 00	
Gow, John E	" "	150 00	
Bernier, J. A	" "	150 00	
Ralston, T	" "	100 00	
Olivier, H	" "	100 00	
Daveluy, J. P	" "	100 00	
Brennan, D. J	" "	150 00	
Bernard, N. J. D	" "	100 00	
Dumaine, J. D	" "	100 00	
Taylor, G. W	" "	175 00	
Murray, David	" "	150 00	
Bouchard, Jos	" "	100 00	
Allen, G. A	" "	200 00	
Gray, R. S	" "	100 00	
Dick, J. W	" "	200 00	

APPENDIX B.—No. 1.—Details of Excise Expenditures for the Year ended March 31, 1908—*Concluded.*

To whom paid.	Service.	Amounts paid.	Total amounts paid.
	Duty-pay.	$ cts.	$ cts.
Cameron, D. M.	From April 1, 1907, to March 31, 1908.	200 00	
Young, R. E.	" "	200 00	
Desaulniers, J. E. A.	" "	200 00	
Millier, E.	" "	150 00	
Coleman, J, J.	" "	150 00	
Traversy, F. X.	" "	100 00	
Bourget, O.	" "	100 00	
Corriveau, O.	" "	100 00	
Quinn. Jno. D.	" "	150 00	
Scullion, W. J.	" "	100 00	
Fairley, W.	" "	100 00	
Johnson, J. J.	" "	100 00	
Berry, H. L.	" "	150 00	
Mulroney, G.	" "	75 00	
McIntosh, W. A.	From April 1, 1907 to June 30, 1907.	25 00	
Parent, Arthur.	" " " 17, 1907.	21 39	
Cumuiford. F. D.	" June 24, 1907, to March 31, 1908.	76 60	
Petrimoulx, D.	" July 1, 1907, to March 31, 1908.	75 00	
Howard, W. W. S.	" April 1, 1907, to February 30, 1908.	91 67	
Poitras, Wilfrid.	" June 17, 1907, to August 12, 1907.	15 16	
Martineau, E. J.	" August 12, 1907, to March 31, 1908.	63 44	
Gauvin, E.	" May 6, 1907, to March 31, 1908.	90 33	
McGuire, L. J.	" April 1, 1907, to May 5, 1907.	9 67	
Sykes, W. J.	" March 10, 1908, to March 31, 1908.	6 03	
	Total duty pay.		9,949 29
	Grand total.		543,461 92
	ADD—Printing	8,895 58	
	Stationery.	2,237 09	
	Lithographing.	1,666 04	12,798 71
			556,260 63
	ADD—Balances due to Collectors, April 1, 1907	40 08	
	" by " March 31, 1908.	343 98	
			393 06
			556,653 69
	LESS—Balances due by Collectors, April 1, 1907.	343 98	
	" to " March 31, 1908.	49 08	
			393 06
	Actual disbursements agreeing with Statement No. 4, page 12.		556,260 63

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

W. J. GERALD,
Deputy Minister.

APPENDIX B.—No. 2.—Distribution of Seizures for the Year ended March 31, 1908.

Divisions.	To whom paid.	Service.	Amounts paid.	Total amounts paid.
			$ cts.	$ cts.
Brantford	O'Donoghue M. J.	For his share of seizure, No. 48		6 25
	Sloan, W.	" " " 48		6 25
	Kerr, F. W.	" " " 48		6 25
	Newsome, I.	" " " 48		6 25
London	Alexander, T.	To pay informer ½ penalty in seizure, No. 73	25 00	
		" " " " 74	25 00	
				50 00
Toronto	Frankland, H. R.	For his share of seizure, No. 419		5 00
	Henderson, W.	" " " 420		12 50
Joliette	Brabant, J. B. G. N.	" " " 143		5 75
Montreal	Toupin, J. A.	" " " 1112		0 50
		To pay informer penalty in seizure, No. 1147	50 00	
		" " " " 1151	25 00	
		" " " " 1156	5 00	
		" " " " 1157	5 00	
				85 00
	Caven, W.	For his share of seizure, No. 1091		9 75
	Comte, L. A.	" " " 1095	0 25	
		" " " 1137	0 55	
		" " " 1138	2 61	
		" " " 1143	75 00	
		" " " 1146	17 25	
		" " " 1151	15 37	
				111 03
	Brabant, J. B. G. N.	" " " 1095	0 25	
		" " " 1112	0 50	
		" " " 1132	4 00	
		" " " 1133	2 15	
		" " " 1134	2 83	
		" " " 1135	14 00	
		" " " 1136	4 31	
		" " " 1137	0 55	
		" " " 1138	2 62	
		" " " 1143	75 00	
		" " " 1144	7 15	
		" " " 1146	17 25	
		" " " 1149	16 52	
		" " " 1151	15 38	
				162 51
	Normandin, G.	" " " 1140	14 83	
		" " " 1141	12 10	
		" " " 1145	25 00	
		" " " 1147	24 03	
		" " " 1147	1 50	
				77 46
	O'Donnell, M.J.	For his share of seizure No. 1147	24 02	
		" " 1147	1 50	
				25 52
	Dunouchel, L.	" " 1149		16 53
Quebec	Arcand, D.	To pay informer penalty in seizure, No. 572.	25 00	
		" " " 584.	25 00	
		" " " 586.	25 00	
				75 00
	Bourget, O.	For his share of seizure, No. 575	22 23	
		" " 576	9 74	
		" " 577	12 90	
		" " 578	7 75	
		" " 581	115 97	
		" " 582	194 50	
		" " 584	5 20	
				368 29
	Trudel, E.	" " 575	22 23	
		" " 576	9 73	
		" " 578	7 75	
		" " 581	115 98	
		" " 584	5 19	
				160 88

APPENDIX B.—No. 2.—DISTRIBUTION of Seizures for the Year ended March 31, 1908.—*Concluded.*

Divisions.	To whom paid.	Service.	Amounts paid.	Total amounts paid.
			$ cts.	$ cts.
St. John, N.B...	Belyea, T. H.....	To pay informer penalty in seizure, No. 139.	25 00	
		" " " 140.	25 00	
		" " " 141.	25 00	
		" " " 144	25 00	
		" " " 145.	25 00	
		" " " 146.	25 00	
		" " " 147.	25 00	
				175 00
	Kelley, J. T.....	For his share of seizure, No. 139.....	22 50	
		" " 140.....	30 90	
		" " 141.....	21 20	
		" " 144.....	22 75	
		" " 148.....	22 75	
				120 10
Charlottetown...	Com'r. of Customs...	" Genl. " 5097.....		50 00
Vancouver.....	Miller, J. E	To pay informer penalty in seizure, No. 35.	25 00	
		" " " 36.	25 00	
		" " " 37.	250 00	
		" " " 38.	25 00	
				325 00
		For his share of seizure, No. 37.....	55 01	
		" " 37.....	33 01	
				88 02
	Parkinson, E. B.....	For his share of seizure, Genl. No. 5073...		4 85
		To pay informer penalty in seizure, No. 39.	25 00	
		" " " 40.	25 00	
		" " " 41.	25 00	
		" " " 42.	5 00	
		" " " 43.	5 00	
		" " " 44.	25 00	
		" " " 45.	25 00	
		" " " 46.	25 00	
				160 00
	Thorburn, James...	For his share of seizure No. 34.....	30 25	
		" " 35.....	27 70	
		" " 36.....	31 65	
		" " 38.....	30 60	
				120 20
	Wolfenden, W.....	" " 37.....	55 02	
		" " 37.....	33 02	
				88 04
	Allen, G. A.....	" " 37.....	55 02	
		" " 37.....	33 02	
				88 04
		Distribution of seizures.. .		2,409 97

RECAPITULATION.

Ontario	$ 92 50
Quebec	1,098 22
New Brunswick	295 10
Prince Edward Island	50 00
Vancouver	874 15
	$2,409 97

W. J. GERALD,
Deputy Minister.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

APPENDIX B—*Continued.*

No. 3.—DETAILS of Sundry Minor Expenditures for the Year ended March 31, 1908.

To whom paid.	Service.	Deductions for Superannuation	Guarantee.	Amounts paid.	Total amounts paid.
	Minor Expenditures.			$ cts.	$ cts.
American Bank Note Co....	Stamps supplied....			14 70	
Jennings, John.....	Law costs, King vs. The Western Fertilizer Co ...			20 27	
The Pontiac Advance.....	Advertising tenders for Lapasse Ferry..			8 25	
The Pembroke Observer.....	" " "			8 25	51 47
		$ cts.	$ cts.		
	ADULTERATION OF FOOD.				
Macfarlane, Thomas, Ottawa	Salary as Chief Analyst from April 1 to June 30, 1907.....	15 00		735 00	
McGill, A..... "	Salary as 1st Assistant Analyst, from April 1 to July 26, 1907, and Chief Analyst from July 27 1907 to March 31, 1908	51 10		2,505 50	
Valin, J. A. G..... "	Salary as Assistant Analyst for the year.....			978 30	
Lemoine, A. ..... "	" Assistant Analyst for the year			978 30	
Wright, S. E. ..... "	" Clerk in laboratory for the year.....			900 00	
Davidson, E..... "	" Clerk in laboratory for the year.....			900 00	
Bélisle, E..... "	" Clerk in laboratory for the year.....			824 94	
Macfarlane, A. C.... "	" Clerk in laboratory for the year.			799 92	
Rickey, J. A. .... . "	Salary as Clerk in laboratory from June 10, 1907 to March 31, 1908			485 00	
Ladouceur, J..... "	Salary as Messenger for the year.			750 00	
Kidd, Thomas, Seaforth, Ont	" Food Inspector for the year.....		0 90	499 10	
Hogan, J., Kingston, Ont....	" Food Inspector for the year.....		0 90	197 62	
Sanderson, A. E., Ottawa, O	" Food Inspector from April 1 to April 22, 1907..			11 66	
Rickey, J., Ottawa, Ont.....	" Food Inspector from June 10 1907 to March 31, 1908.....		0 87	160 73	
Bélisle, E., "	" Food Inspector from April 27, 1907, to March 31, 1908.....		0 90	91 84	
Dager, H. J., Toronto, Ont..	" Food Inspector from May 6, 1907 to March 31, 1908.....		0 90	89 38	
Talbot, John, London, " ..	" Food Inspector from January 1 to March 31, 1908..... ...		0 27	49 71	
Costigan, J. J., Montreal, Q	" Food Inspector for the year.....	7 00	0 90	342 10	
Béland, F. X. W. E., Que. Q	" Food Inspector for the year..		0 90	299 10	

APPENDIX B—*Continued.*

No. 3.—Details of Sundry Minor Expenditures for the Year ended March 31, 1908—*Continued.*

To whom paid.	Service.	Deduction for Superannuation.	Guarantee.	Amounts paid.	Total amounts paid.
	Adulteration of Food—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.
Rouleau, J. C., St. Hyacinthe, Q	Salary as Food Inspector for the year		0 90	199 10	
Ferguson, J.C., St.John, N.B.	" Food Inspector for the year	4 00	0 90	195 10	
Waugh, R. J., Halifax, N.S.	" Food Inspector for the year		0 90	349 10	
Earl, R. W., Winnipeg, Man.	" Food Inspector from April 1 to July 1, 1907		0 09	29 46	
Larivière, A. C., "	" Food Inspector from July 27, 1907, to March 31, 1908		0 72	67 26	
Moore, T., Charlottetown, P.E.I	" Food Inspector for the year		0 90	199 10	
Fletcher, R. W Calgary, Alta	" Food Inspector for the year		0 90	199 10	
Parkinson, E. B., Vancouver, B.C	" Food Inspector from April 1 to Dec. 1, 1907		0 63	149 31	
Power, J. F., Vancouver, B.C	" Food Inspector from Jan. 1 to March 31, 1908		0 27	49 71	
O'Sullivan, D., Victoria, B.C.	" Food Inspector for the year		0 90	99 10	
	Total salaries	77 10	13 65		13,134 54
	Contingencies.				
Chief Analyst for the Ottawa Laboratory	Travelling expenses			376 85	
" "	To pay for special assistance			32 08	
" "	" rent of laboratory			400 00	
" "	" sundries for laboratory			1,905 53	
Kidd, Thomas	Travelling expenses and purchases of samples, &c.			390 32	
Hogan, J	" "			188 10	
Sanderson, A. E	" "			30 35	
Rickey, J. A	Travelling expenses and purchases of samples			136 13	
Bélisle, E	" " "			104 43	
Talbot, John	" " "			76 26	
Dager, J	" " "			254 38	
Costigan, J. J	" " "			298 38	
Béland, F. X., W. E	" " "			219 60	
Rouleau, J. C	" " "			387 44	
Ferguson, J. C	" " "			371 81	
Waugh, R. J	" " "			230 34	
Earl, R. W	" " "			93 55	
Larivière, A. C	" " "			106 08	
Moore, T	" " "			127 83	
Fletcher, R. W	" " "			399 63	
Parkinson, E. B	" " "			116 60	
Power, J. F	" " "			24 35	
O'Sullivan, D. V., B. C	" " "			63 05	
					6,332 89
Ellis, W. H	Allowance under Act for retaining fees			200 00	
	" " rent			100 00	
	" " material used in analyses			100 00	
	Fees for analyses			168 00	
					568 00
Bowman, W	Allowance under Act for retaining fees			200 00	
	" " rent			100 00	
	" " material used in analyses			100 00	
	Fees for analyses			472 37	
					872 37

APPENDIX B—*Continued.*

No. 3.—Details of Sundry Minor Expenditures, for Year ended March 31, 1908.—*Concluded.*

To whom paid.	Service.	Amounts paid.	Total amounts paid.
	Adulteration of Food—*Concluded.*	$ cts.	$ cts.
	Contingencies—Concluded.		
Valade, F. X.	Allowance under Act for retaining fees	200 00	
	" " rent	100 00	
	" " material used in analyses	100 00	
	Fees for analyses	112 00	
			512 00
Donald, J. T.	Allowance under Act for retaining fees	200 00	
	" " rent	100 00	
	" " material used in analyses	100 00	
	Fees for analyses	208 90	
			608 90
Fagan, J. C.	Allowance under Act for retaining fees	200 00	
	" " rent	100 00	
	" " material used in analyses	100 00	
	Fees for analyses	369 67	
			769 67
Lyman Sons & Co.	Chemicals for laboratory	8 65	
Gooderham & Worts	46·37 gallons alcohol (including express charges)	52 06	
Eimer & Amend	Chemicals, apparatus, &c	113 49	
The Chemist and Surgeons Supply Co.	" "	82 61	
Collector of Customs	Duty on imported goods	67 88	
Pritchard & Andrews Co., The	Seals, stamps, repairs, &c.	9 90	
Brassard, E.	Law costs—Rex *vs.* Delorme	10 00	
" "	" " G. Chartrand	20 00	
" "	" " J Lamoureux	20 00	
Chisholm, James H.	" " Bothwick	27 55	
Thompson, A. T. & Co.	One Ideal Lantern and outfit	124 95	
Dr. Girwood, G. P.	Travelling expenses re examination of Public Analyst, Montreal	25 00	
Choquette, C. P.	Travelling expenses re examination of Public Analyst, St. Hyacinthe	27 50	
Johnson, Mathey & Co., Ltd.	Platinum dishes	38 67	
Bryson, Graham & Co.	Glasolinen tape, spools and towels	18 30	
Dethloff, Albert	Chemical apparatus	4 64	
Ahern, J	Law costs	50 00	
Potvin, Mrs. Amanda	Washing, ironing and stamping $13\frac{5}{12}$ doz. of towels	10 06	
Fréchette, A.	Technical translation of bulletins	43 32	
			754 58
	Total adulteration of food expenditure		23,552 95
	Add—Printing	2,184 39	
	Stationery	551 73	
	Lithographing	238 45	
			2,974 57
	Grand total, agreeing with statement No. 8, page 17		26,527 52

Inland Revenue Department,
Ottawa, June 11, 1908.

W. J. GERALD,
Deputy Minister.

APPENDIX B—*Continued.*

No. 4.—Details of Departmental Expenditures, for the Year ended March 31, 1908.

Names.	Rank.	Period.	Deductions for			Amounts paid.	Total amounts paid.
			Superannuation.	Retirement.	Insurance.		
			$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Templeman, Hon. W.	Minister	For the year	.....	.....	.....	7,000 00	
Gerald, W. J	Deputy Minister	"	....	.....	.....	4,000 00	
Himsworth, W.	Chief Clerk, Secretary	"	.....	.....	.....	2,700 00	
Campeau, F. R. E.	Chief Clerk, Chief Accountant	"	.....	.....	....	2,700 00	
Valin, J. E.	Chief Clerk, Assistant Accountant	"	39 50	.....	.....	1,935 50	
Shaw, J. F.	Chief Clerk, Chief Statistical Clerk	"	.....	.....	.....	1,975 00	
Doyon, J. A.	Chief Clerk, Weights and Measures	"	39 50	.....	....	1,935 50	
Carter, W.	Assistant Secretary	"	38 00	.....	.....	1,862 00	
Westman, T.	Accountant's Branch Clerk	"	35 75	.....	.....	1,751 75	
Quain, R.	" "	"	50 63	....	61 92	1,574 95	
Fowler, G.	Secretary's "	"	.....	.....	.....	1,687 50	
Newby, F.	" "	"	30 00	.....	.....	1,470 00	
Burns, J.	Accountant's "	From April 1 to Oct. 31, 1907	17 50	.....	.....	857 50	
Hudon, L. E.	Secretary's "	From April 1 to May 31, 1907	8 16	.....	....	225 16	
Hughes, P. A.	Accountant's "	For the year	48 56		94	1,297 00	
McCullough, A.	Secretary's "	"	27 75	.....	.....	1,359 75	
Halliday, W. A.	Accountant's "	"	48 56	.....	.....	1,338 94	
Roy, L. G.	" "	"	47 25	....	.....	1,302 75	
Desaulniers, E. L.	" "	"	.	64 38	.....	1,223 12	
Ostiguy, L. R.	" "	"	.....	63 13	...	1,199 37	
Nicholas, B. C.	Senior Second Class Clerk	"	.....	62 50	.....	1,187 50	
"	Private Secretary	"	.....	.....	.....	475 00	
Brodeur, P. E. S.	Accountant's Branch Clerk	"	....	60 63	.....	1,151 87	
Chateauvert, G. E.	" "	"	....	57 08	...	1,084 58	
Gervais, J. H.	" "	"	....	49 79	.....	946 03	
Lawless, E. M.	Secretary's "	"	.....	49 38	.....	938 12	
Hagerty, B.	" "	"	.	49 38	.....	938 12	
Charbonneau, E	" "	"	.....	49 38	.....	938 12	
Doyle, E. F.	" "	"	.....	44 38	.....	843 12	
Watson, V. M.	" "	"	....	44 38	.....	843 12	
Goodhue, M. L. E. B.	Accountant's "	"	.....	44 38	.....	843 12	
Trumpour, G.	Junior Second Class Clerk	"	.....	44 38	.....	843 12	
Furlong, C. J.	Accountant's Branch Clerk	"	.....	37 49	.....	712 49	
Beard, M. H.	Junior Second Class Clerk	"	.....	36 25	.....	688 75	
"	Assistant Private Secretary	"	.....	.....	.....	125 00	
Griffith, M. L.	Junior Second Class Clerk	"	.....	30 39	.....	577 88	
Allen, A. T.	Secretary's Branch Clerk	From Jan. 2 to Mar. 31, 1908	.....	6 17	.....	117 46	
Yetts, R. P.	Messenger	For the year	24 15	.....	54 48	611 37	
			455 31	793 47	158 34		53,260 56

APPENDIX B—*Continued.*

No. 4.—DETAILS of Departmental Expenditures, 1907 and 1908—*Continued.*

Names.	Service.	Amounts paid.	Total amounts paid.
	Contingencies.	$ cts.	$ cts.
Robert, A	Salary as extra messenger for the year	700 00	
Bourgeois, E	" " "	662 48	
Teevens, L. P	" " "	514 70	
C. P. R. Telegraph Co	Telegrams	592 69	
Gerald, W. J	Travelling expenses	57 86	
Postmaster	Postage	59 33	
The Bell Telephone Co	Messages	12 20	
G. N. W. Telegraph Co	Telegrams	305 42	
King's Printer	Printing	1,652 71	
"	Parliamentary publications	248 30	
"	Lithographing	3 75	
Controller of Stationery	Stationery	1,351 76	
Kingsley, W. J	Services as expert in writing	100 00	
Chas. Higgerty, Ottawa	Fee for Customs entries	16 50	
Bryson, Graham & Co	Towels, brushes, combs, soap, etc	52 40	
Thornton & Truman	General repairs of locks and keys	18 80	
Graves Bros	Supplies in hardware line	7 80	
Nicholas, B. C	Travelling expenses	109 35	
The Enterprise Printery, Saskatchewan	Subscription	1 00	
Daily Telegraph, St. John	"	5 00	
The Acadiensis	"	1 50	
The Chronicle, Montreal	"	2 00	
Farmer's Advocate, London	"	1 50	
Times Printing Co., Hamilton	"	3 00	
News Advertiser, Vancouver	"	5 00	
Le Canada, Montreal	"	6 00	
The Daily News, Chatham	"	3 00	
The Telegram, Winnipeg	"	4 00	
The Toronto World	"	5 00	
The Daily Telegraph, St. John	"	5 00	
Intelligencer, Belleville	"	3 00	
Le Cultivateur, Montreal	"	1 00	
The Herald Publishing Co., Montreal	"	6 00	
Munn & Co., New York	"	8 25	
The Daily Telegraph, Quebec	"	18 00	
The Tobacco World Publishing Co., Philadelphia	"	2 00	
The Manitoba Free Press Co., Winnipeg	"	4 00	
The Saturday Night, Toronto	"	4 00	
The Sentinel Review, Woodstock	"	3 00	
The United Canada, Ottawa	"	1 50	
Le Temps, "	"	3 00	
La Cie d'Imprimerie d'Arthabaskaville	"	1 00	
Le Bulletin des Recherches Historiques, Lévis	"	2 00	
Gazette Printing Co., Montreal	"	12 00	
The North Bay Times	"	1 00	
Canada Français, St. Jean	"	1 00	
Le Canadien, Chatham	"	1 50	
Sherbrooke Record Co	"	2 00	
The Rossland Miner, Rossland	"	3 00	
The Mines Publishing Co. Ltd., Toronto	"	7 18	
The Citizen, Ottawa	"	12 00	
Ottawa Free Press	"	10 80	
The Mail Printing Co., Toronto	"	4 00	
The Tribune Publishing Co	"	4 00	
The News Publishing Co., Toronto	"	3 00	
The Journal Printing Co., Ltd,, Ottawa	"	7 20	
L'Echo de Quebec	"	1 50	
Globe Printing Co., Toronto	"	8 00	
Le Bulletin, Montreal	"	1 00	
The Shareholder, Montreal	"	2 00	

APPENDIX B—*Continued.*

No. 4.—DETAILS of Departmental Expenditures 1907 and 1908—*Concluded.*

Names.	Service.	Amounts paid.	Total amounts paid.
	Contingencies.—Concluded.	$ cts.	$ cts.
Witness Printing House, Montreal	Subscription	6 00	
Acadian Recorder, Halifax	"	5 00	
Catholic Register	"	1 00	
The Trade Review	"	2 00	
The Daily News, Nelson, B. C	"	13 06	
The Montreal Star Publishing Co	"	3 00	
Toronto Daily Star	"	3 00	
Le Progrès, Windsor	"	4 00	
Times Printing Co., Hamilton	"	3 00	
La Tribune, St. Hyacinthe	"	1 00	
The Journal, St. Catharines	"	12 00	
Chronicle Publishing Co., Ltd., Halifax	"	5 00	
Le Soleil, Quebec	"	6 00	
L'Avenir du Nord, St. Jérôme	"	2 00	
Jones Yarrell & Co., London, Eng	"	17 03	
The World Office, Vancouver	"	9 00	
L'Union, St. Hyacinthe	"	1 50	
The Daily Herald, Nanaimo	"	5 00	
Le Spectateur, Hull	"	2 68	
Courrier de l'Ouest, Edmonton	"	1 00	
The Colonist, Victoria	"	5 00	
Canadian Express Co	Express charges	7 45	
Dominion Express Co	" "	4 57	
Storr, A. M	Cartage	33 15	
Robert, Mrs. R	Washing and marking towels	6 25	
Maveity, Mrs. S	Washing towels	55 00	
Auger, B.	Christmas gratuity	1 00	
Carley, John	" "	1 00	
Mahoney, J	" " 50 cts. and cab hire	12 40	
G. N. W. Telegraph Co., messengers	" "	3 75	
C. P. R. " "	" "	3 75	
Poulin, L. N	Jugs	2 25	
Graham Bros	Sundries	7 50	
Ottawa Electric Railway Co	Street car tickets	5 00	
Sproule, W. H.	Repairing clocks, etc	10 00	
McMillan, J. A	" "	2 00	
Himsworth, W.	Petty expenses for department	1 25	
	Total departmental contingencies		6,909 57
	Authorized disbursments, (less superannuation, retirement and insurance)		60,170 13
	ADD—Balance due March 31, 1908		16 66
			60,186 79
	LESS—Balance due April 1, 1907		16 66
	Actual disbursements agreeing with statement No. 17, page 52		60,170 13

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

W. J. GERALD,
Deputy Minister.

APPENDIX B—*Continued.*

No. 5.—DETAILS of Weights and Measures Expenditures, for the Year ended March 31, 1908.

To whom paid.	Districts.	Deductions.			Amounts paid.	Total amounts paid.
		Retirement.	Superannuation.	Guarantee.		
	Belleville.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Johnson, W.	Salary as Inspector for the year		24 00	3 60	1,172 40	
Slattery, T.	" Assistant Inspector for the year		15 00	1 80	733 20	
Gallagher, T.	" Assistant Inspector for the year			1 80	598 20	
Johnston, C. W.	" Assistant Inspector for the year			1 80	598 20	
Kylie, R.	" Assistant Inspector from January 1 to March 31, 1908			0 45	149 55	
Howson, G. H.	" Assistant Inspector from February 11 to March 31, 1908			0 30	82 45	
	Salaries		39 00	9 75	3,334 00	
	Contingencies				4,189 86	
						7,523 86
	Hamilton.					
Freed, A. T.	Salary as Inspector for the year			3 60	1,596 36	
Marentette, A.	" Assistant Inspector for the year		16 04	1 80	782 16	
Fitzgerald, E. W.	" Assistant Inspector for the year			1 80	798 12	
Wheatley, A. E.	" Assistant Inspector for the year			1 80	798 12	
Laidman, R. H.	" Assistant Inspector for the year			1 80	748 20	
Robins, S. W.	" Assistant Inspector for the year			1 80	648 12	
Clegg, J.	" Assistant Inspector for the year			1 80	560 67	
	Salaries		16 04	14 40	5,931 75	
	Contingencies				1,785 02	
						7,716 77
	Ottawa.					
Macdonald, J. A.	Salary as Inspector for the year			3 60	1,446 36	
Breen, J.	" Assistant Inspector for the year			1 80	748 20	
Macfarlane, J.	" Assistant Inspector from April 1, 1907 to February 1, 1908		12 50	1 50	611 00	
Winsor, J.	" Assistant Inspector for the year			1 80	698 16	
Findlay, R.	" Assistant Inspector for the year			1 80	698 16	
	Salaries		12 50	10 50	4,201 88	
	Contingencies				1,443 83	
						5,645 71
	Toronto					
Kelly, D.	Salary as Inspector for the year			3 60	1,346 40	
Milligan, R. J.	" Assistant Inspector for the year			1 80	798 12	
Wright, R. J.	" Assistant Inspector for the year		16 04	1 80	782 16	
Murdock, J.	" Assistant Inspector for the year			1 80	748 20	

APPENDIX B—*Continued.*

No. 5.—Details of Weights and Measures Expenditures, for the Year ended March 31, 1908—*Continued.*

To whom paid.	Districts.	Deductions for			Amounts paid.	Total amounts paid.
		Retirement.	Superannuation.	Guarantee.		
	Toronto—Con.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Smith, J. C.	Salary as Assistant Inspector for the year	...	.....	1 80	748 20	
Lyons, A.	" Assistant Inspector from May 20, 1907 to March 31, 1908	.....	.....	1 56	517 79	
Cruikshanks, J. L.	" Assistant Inspector from January 1 to March 31, 1908	.....	.....	0 45	162 03	
	Salaries	.....	16 04	12 81	5,102 90	
	Contingencies	.....	.....	.....	2,607 42	
						7,710 32
	Windsor.					
Hayward, W. J.	Salary as Inspector for the year	.....	31 96	3 60	1,564 44	
Coughlin, D	" Assistant Inspector for the year	.....	.....	1 80	798 12	
Thomas, J. S.	" Assistant Inspector for the year	.....	.....	1 80	798 12	
Hughes, R. A.	" Assistant Inspector for the year	.....	.....	1 80	798 12	
Liddle, D.	" Assistant Inspector for the year	.....	.....	1 80	573 18	
Butler, F. H.	" Assistant Inspector from January 1 to March 31, 1908	....	.....	0 45	149 55	
	Salaries	....	31 96	11 25	4,681 53	
	Contingencies	..	.....	.. ....	2,477 03	
						7,158 56
	Montreal.					
Chalus, J. O.	Salary as Inspector for the year	.. ..	31 96	3 60	1,564 44	
Daoust, J. A.	" Assistant Inspector for the year	.....	16 04	1 80	782 16	
Hébert, J. A.	" Assistant Inspector for the year	.....	.....	1 80	798 12	
Boudet, E.	" Assistant Inspector for the year	.....	.....	1 80	798 12	
Collins, D.	" Assistant Inspector from April 1 to October 1, 1907	.....	.....	0 90	399 06	
Beaulac, J. H.	" Assistant Inspector for the year	.....	.....	1 80	698 16	
Hall, H. C.	" Assistant Inspector for the year	.. ...	.....	1 80	648 12	
Gallipeau, J. B. N.	" Assistant Inspector for the year	.	.....	1 80	581 52	
Wilson, J. C.	" Assistant Inspector from January 1 to March 31, 1908	.....	.....	0 45	149 55	
	Salaries	.... .	48 00	15 75	6,419 25	
	Contingencies	.....	.....	....	4,071 58	
						10,490 83
	Quebec.					
Roy, C. E.	Salary as Inspector for the year	.....	.....	3 60	1,396 32	
LeBel, J. A. W.	" Asst. Inspector for the year	.....	38 60	1 80	1,059 60	
Guay, A.	" " "	.....	....	1 80	748 20	
Préfontaine, F. H.	" " "	.....	.....	1 80	698 16	
Knowles, C.	" " "	. ...	.....	1 80	748 20	
Petit, J. B.	" " "	. ....	.....	1 80	598 20	
Bourget, L. J.	" " "	.....	.....	1 80	735 69	

APPENDIX B—*Continued.*

No. 5.—DETAILS of Weights and Measures Expenditures for the Year ended March 31, 1908—*Continued.*

To whom paid.	Service.	Deductions for			Amounts paid.	Total amounts paid.
		Retirement.	Superannuation.	Guarantee		
		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
	Quebec—Con.					
Parent, P.	Salary as Asst. Inspector, from April 1 to Dec. 31, 1907, and from Feb. 29 to March 31, 1908.	.....	.....	1 80	558 47	
Bugeaud, J. F.	" Asst. Inspector from Jan. 1 to March 31, 1908.	.....	.....	45	99 54	
Caldwell, A. B.	" Asst. Inspector from Jan. 1 to March 31, 1908.	.....	.....	45	99 54	
	Salaries	.....	38 60	17 10	6,741 92	
	Contingencies	.....	.....	.....	3,126 92	
						9,868 84
	St. Hyacinthe.					
Morin, J. P	Salary as Inspector for the year.	.....	.....	3 60	933 84	
Tomlinson, W. W.	" Asst. Inspector for the year. (Leave of absence granted him from May 1 to Nov. 1, '07)	.....	.....	1 05	436 45	
Dessert, V.	" Asst. Inspector for the year.	.....	.....	1 80	726 51	
Thérien, J. F.	" " "	.....	.....	1 80	676 47	
	Salaries	.....	.....	8 25	2,773 27	
	Contingencies	.....	.....	.....	1,257 89	
						4,031 16
	Three Rivers.					
Gravel, A. I	Salary as Inspector for the year.	.....	.....	3 60	996 36	
Bolduc, E.	" Asst. Inspector for the year.	.....	.....	1 80	598 20	
	Salaries	.....	.....	5 40	1,594 56	
	Contingencies	.....	.....	.....	999 24	
						2,595 80
	St. John.					
Barry, J	Salary as Inspector for the year.	.....	.....	3 60	1,196 40	
Bernier, J. A.	" Asst. Inspector for the year.	.....	.....	1 80	598 20	
LeBlanc, F. X.	" " "	.....	.....	1 80	598 20	
White, H. E.	" " "	.....	.....	1 80	564 83	
	Salaries	.....	.....	9 00	2,957 63	
	Contingencies	.....	.....	.....	409 95	
						3,367 58
	Cape Breton.					
Laurence, G. C.	Salary as Inspector for the year.	.....	.....	3 60	846 36	
	Contingencies	.....	.....	.....	550 47	
						1,396 83
	Halifax.					
Frame, A.	Salary as Inspector for the year.	.....	.....	3 60	1,096 32	
Waugh R. J	" Asst. Inspector for the year.	.....	.....	1 80	648 12	
	Salaries	.....	.....	5 40	1,744 44	
	Contingencies	.....	.....	.....	1,788 07	
						3,532 15

APPENDIX B—*Continued.*

No. 5.—DETAILS of Weights and Measures Expenditures, for the Year ended March 31, 1908—*Continued.*

To whom paid.	Service.	Deductions for			Amounts paid.	Total amounts paid.
		Retirement.	Superannuation.	Guarantee		
	Picton.	$ cts.	$ cts.	$ cts	$ cts.	$ cts.
Dustan, W. M...	Salary as Inspector for the year.		19 96	3 60	976 44	
Chisholm, J. J....	" Asst. Inspector for the year.			1 80	698 16	
	Salaries		19 96	5 40	1,674 60	
	Contingencies				363 08	
						2,037 68
	Charlottetown.					
Davy, E.	Salary as Inspector for the year.			3 60	1,004 70	
Hughes, H.	" Asst. Inspector for the year.			1 80	648 12	
	Salaries			5 40	1,652 82	
	Contingencies				319 60	
						1,972 42
	Winnipeg.					
Magness, R.	Salary as Inspector for the year.			3 60	1,396 32	
Mager, J. G.	" Asst. Inspector for the year.			1 80	154 79	
McKay, R.	" " "			1 80	748 20	
Girdlestone, R. J.	" " "		3 80	1 72	186 33	
Gilby, W. F.	" " "			1 80	585 69	
Spicer, H.	" " from Jan. 1 to March 31, 1908			45	149 55	
Thomson, J. C.	" Asst. Inspector from Feb. 11 to March 31, 1908			30	82 45	
	Salaries		3 80	11 47	3,303 33	
	Contingencies				2,708 08	
						6,011 41
	Calgary.					
Costello, J. W.	Salary as Inspector for the year.		19 96	3 60	976 44	
McDonald, A. W.	" Asst. Inspector for the year.			1 80	748 20	
	Salaries		19 96	5 40	1,724 64	
	Contingencies				1,053 71	
						2,778 35
	Nelson.					
Parker, T.	Salary as Inspector for the year.			3 60	971 37	
	Contingencies				729 80	
						1,701 17
	Vancouver.					
Marshall, R.	Salary as Inspector for the year.			3 60	971 37	
Findley, H.	" Asst. Inspector for the year.			1 80	898 20	
McAloney, J. A.	" Asst. Inspector from April 1, 1907, to Feb. 1, 1908. Dead.			1 50	290 10	
Shaw, J.	" Asst. Inspector from Feb. 24 to March 31, 1908			18	35 01	
	Salaries			7 08	2,194 68	
	Contingencies				810 70	
						3,005 38

APPENDIX B—*Continued.*

No. 5.—Details of Weights and Measures Expenditures for the Year ended March 31, 1908—*Continued.*

To whom paid.	Service.	Deductions for			Amounts paid.	Total amounts paid.
		Retirement.	Superannuation.	Guarantee		
	Dawson.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Macdonald, J. F.	Salary as Inspector for the year	....	.....	3 60	996 40	
	Contingencies	.....	.....	.....	22 75	1,019 15
	Chief Inspector.					
Fyfe Jas.	Salary as Chief Inspector for the year	.....	.....	.....	2,600 00	
	Contingencies	.....	.....	.....	319 36	2,919 36
	General Contingencies.					
American Bank Note Co.	For printing stamps				110 00	
Pritchard & Andrews Co., The	Crown stamps, numerals, stamps, punches and repairs				501 42	
MacGregor-Gourlay Co., Ltd	1-18" x 6" bed Engine Lathe				491 79	
London Machine Tool Co., Ltd	12 h. power, 1 drilling machine and 2 emery grinders				335 00	
Burgess, T.	Salary as mechanical assistant for the year				900 00	
Barbeau, Mrs. L	Salary, extra services as clerk for the year				499 92	
Brown, Jas.	Services as mechanic, 71 days at $2.25 per diem, from January 9 to March 31, 1908				159 75	
Brassard, E.	Law cost in *re* Rex *vs.* A. Dagenais				28 60	
"	" P. N. Duckett				10 00	
Collector of Customs	Duty paid on imported goods				215 80	
Graves Bros	General supply of hardware goods				9 78	
Butterworth & Co.	25 stamp cases				19 50	
Jennings, John	Law cost in *re* Rex *vs.* F. T. James & Co., Ltd.				10 06	
Canadian Express Co., The	Express charges				10 05	
Dominion Express Co., The	"				7 50	
Grand Trunk Railway System	Freight				8 08	
Canadian Pacific Railway	"				5 30	
Canada Transport Co	Cartage				2 50	
	Total general contingencies					3,325 05
	Provisional Allowance.					
Magness, R., Winnipeg, Manitoba	To pay McKay, R., for provisional allowance				99 96	
" "	" Spicer, H. " "				99 96	
" "	" Thomson, J. C. " "				99 96	
" "	" Mager, J. G. " "				24 99	
" "	" McDonald, A. W. " "				100 00	
Saucier, F. X., Alberta	" Costello, J. W. " "				24 99	
	Total for provisional allowance					449 86

APPENDIX B—*Continued.*

No. 5.—Details of Weights and Measures Expenditures for the Year ended March 31, 1908—*Concluded.*

To whom paid.	Service.	Amounts paid.	Total amounts paid.
	Metric System.	$ cts.	$ cts.
Capital Planing Mill Co., Ltd., The	Lumber	20 25	
Canadian Express Co., The	Express charges	52 64	
Dominion Express Co., The	"	24 78	
Mahoney, J	Cartage	1 00	
	Total for metric system		98 67
	International Committee of Weights and Measures.		
International Committee of Weights and Measures, Paris	Entrance contribution for the Dominion of Canada to the International Committee of Weights and Measures, Paris, France	1,521 56	
" "	Annual contribution of Canada towards the convention.	153 36	
Fyfe, James	Travelling expenses *re* Convention at Paris	558 94	
	Total		2,233 86
	Grand total		98,591 13
	Add—Printing	1,701 98	
	Stationery	751 01	
	Lithographing	37 10	
			2,490 09
	Actual disbursements (less superannuation, insurance, retirement and guarantee)		101,081 22
	Add—Old balances due by Inspectors, Mar. 31, 1908.		193 26
			101,274 48
	Less—Old balances due by Inspectors, Apr. 1, 1908.		193 26
	Actual disbursements, agreeing with statement (A) page 58		101,081 22

W. J. GERALD,
Deputy Minister.

Inland Revenue Department,
Ottawa, June 11, 1908.

APPENDIX B—*Continued.*

No. 6.—DETAILS of Gas Inspection Expenditures for the Year ended March 31, 1908.

To whom paid.	Service.	Deductions for			Amounts paid.	Total amounts paid.
		Retirement.	Superannuation.	Guarantee.		
	Barrie.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Shanacy, M	Salary as Inspector for the year		2 00	3 60		94 40
	Belleville.					
Johnson, W.	Salary as Inspector for the year		7 04	3 60	339 36	
Stuart, W. E.	" Asst. " "			2 88	97 08	
	Salaries		7 04	6 48	436 44	
	Contingencies				162 50	
						598 94
	Berlin.					
Broadfoot, S.	Salary as Inspector for the year			3 60	96 40	
	Contingencies				76 38	
						172 78
	Brockville.					
Johnston, C. W.	Contingencies					14 90
	Cobourg.					
Bickle, J. W.	Salary as Inspector for the year		2 00	3 60	94 40	
	Contingencies				55 30	
						149 70
	Cornwall.					
Mulhern, M. M.	Salary as Inspector for the year		2 00	3 60	94 40	
	Contingencies				36 90	
						131 30
	Guelph.					
Broadfoot, S.	Salary as Inspector for the year		4 00	3 60	192 40	
	Contingencies				35 46	
						227 86
	Hamilton.					
McPhie, D.	Salary as Inspector for the year		36 00	3 60	1,760 40	
McPhie, W. H.	" Asst. " "			1 80	698 16	
Murphy, F. C	" " " "			1 80	598 20	
Dennis, W. A	" " " "			1 80	148 20	
	Salaries		36 00	9 00	3,204 96	
	Contingencies				836 52	
						4,041 48
	Kingston.					
Gallagher, T.	Salary as Inspector for the year			3 60	396 40	
	Contingencies				116 94	
						513 34
	Listowel.					
Male, T	Salary as Inspector for the year			3 60	96 40	
	Contingencies				90 40	
						186 80

APPENDIX B—*Continued.*

No. 6.—Details of Gas Inspection Expenditures for the Year ended March 31, 1908—*Continued.*

To whom paid.	Service.	Deductions for			Amounts paid.	Total amounts paid.
		Retirement.	Superannuation.	Guarantee.		
	London.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Nash, A. F.	Salary as Inspector for the year	....	.....	3 60	1,246 32	
Skelton, A. R	" Asst. " from April 11, 1907, to March 31, 1908	....	.....	1 75	581 58	
	Salaries	.....	.....	5 35	1,827 90	
	Contingencies	.....	....	.....	311 85	
						2,139 75
	Napanee.					
McPhie, D.	Contingencies	....	....	.....	.....	27 70
	Ottawa.					
Roche, H. G	Salary as Inspector for the year	....	.....	3 60	1,146 36	
Bond, M. B	" Asst. " "	.....	.....	2 88	688 75	
	Salaries	.....	.....	6 48	1,835 11	
	Contingencies	.....	.....	.....	762 16	
						2,597 27
	Owen Sound.					
Graham, W. J	Salary as Inspector for the year	.....	.....	3 60	196 40	
	Contingencies	.....	.....	.....	125 00	
						321 40
	Peterborough.					
Rork, T	Salary as Inspector for the year	.....	.....	3 60	146 40	
	Contingencies	....	.....	.....	4 00	
						150 40
	Sarnia.					
Thrasher, W. A.	Salary as Inspector	....	....	.....	.....	
	Contingencies	.....	.....	.....	...	5 45
	Stratford.					
Rennie, G.	Salary as Inspector for the year	.....	4 00	3 60	192 40	
	Contingencies	.....	.....	.....	13 50	
						205 90
	Toronto.					
Johnstone, J. K.	Salary as Inspector for the year	...	34 04	3 60	1,662 36	
Pape, J	" Asst. " "	.....	.....	1 80	1,035 69	
Whyte, J. A.	" " " from April 1 to Oct. 1, 1907	....	.....	0 90	399 06	
Hunter, W. M	" Asst. Inspector for the year	...	.....	1 80	864 14	
Renahan, M. J	" " " from March 1 to March 31, 1908	.....	...	0 15	49 30	
	Salaries	....	34 04	8 25	4,010 55	
	Contingencies	.....	.....	.....	584 49	
						4,595 04
	Woodstock.					
Orr, H. N.	Salary as Inspector for the year	.....	.....	1 80	98 20	
	Contingencies	...	.....	.....	21 25	
						119 45

APPENDIX B—*Continued.*

No. 6.—Details of Gas Inspection Expenditures for the Year ended March 31, 1908—*Continued.*

To whom paid.	Service.	Deductions for			Amounts paid.	Total amounts paid.
		Retirement.	Superannuation.	Guarantee.		
	Montreal.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Aubin, A.	Salary as Inspector for the year			3 60	1,596 36	
O'Flaherty, M. J.	" Asst. " "			1 80	898 20	
Aubin, C.	" " " "			2 88	897 11	
Mann, W.	" " " from April 15, 1907, to March 31, 1908			2 72	766 09	
	Salaries			11 00	4,157 76	
	Contingencies				488 73	
						4,646 49
	Quebec.					
LeVasseur, N.	Salary as Inspector for the year		22 04	3 60	1,074 36	
Béland, F.X.W.E.	" Asst. " "			3 60	296 40	
	Salaries		22 04	7 20	1,370 76	
	Contingencies				335 08	
						1,705 84
	Sherbrooke.					
Simpson, A. F.	Salary as Inspector for the year		3 00	3 60	143 40	
Bowen, F. C.	" Asst. " "			1 80	98 16	
	Salaries		3 00	5 40		
						241 56
	St. Hyacinthe.					
Benoit, L. V.	Salary as Inspector for the year			1 80		
	Contingencies					
						98 20
	Fredericton.					
Wilson, J. E.	Salary as Inspector for the year			1 80	98 20	
	Contingencies				88 10	
						186 30
	St. John.					
Wilson, J. E.	Salary as Inspector for the year			3 60	1,096 40	
	Contingencies				83 95	
						1,180 35
	Halifax.					
Ritchie, A. J.	Salary as Inspector from April 1, to Nov. 1, 1907. Died Oct. 5, 1907			2 10	581 21	
Cotter, W. F.	" Asst. Inspector from April 1, to Nov. 20, 1907, and Inspector from Nov. 21, 1907, to March 31, 1908			2 40	678 08	
Munro, H. D.	" Asst. Inspector for the year		1 96	1 80	96 24	
	Salaries		1 96	6 30	1,355 53	
	Contingencies				1,024 83	
						2,380 36
	Charlottetown.					
Bell, J. H.	Salary as Inspector for the year			3 60	446 40	
	Contingencies				15 88	
						462 28

APPENDIX B—*Continued.*

No. 6.—DETAILS of Gas Inspection Expenditures for the Year ended March 31, 1908—*Continued.*

To whom paid.	Service	Deductions for			Amounts paid.	Total amounts paid
		Retirement.	Superannuation.	Guarantee.		
	Winnipeg.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Magness, R.	Salary as Inspector for the year			3 60	296 40	
Magee, J. G.	" Asst. " "			2 88	797 04	
	Salaries			6 48	1,093 44	
	Contingencies				400 80	
						1,504 24
	Nanaimo.					
McAloney, J. A.	Salary as Inspector for the year			3 00	80 30	
Shaw, John.	" Asst. " from February 24, to March 31, 1908			0 36	9 58	
	Salaries			3 36		
	Contingencies					
						89 88
	New Westminster.					
Wolfenden, W.	Salary as Inspector for the year	5 00		3 60		
	Coutingencies					
						91 40
	Vancouver.					
Miller, J. E.	Salary as Inspector for the year		4 50	2 70	217 80	
	Contingencies				178 18	
						395 98
	Victoria.					
Jones, R.	Salary as Inspector for the year		4 47	3 60		
	Contingencies					
						216 87
	General.					
Higman, O.	Salary as Chief Gas Inspector for the year					100 00

APPENDIX B—*Continued.*

No. 6.—DETAILS of Gas Inspection Expenditures for the Year ended March 31, 1908—*Concluded.*

To whom paid.	Service.	Amounts paid.	Total amounts paid.
	General Contingencies.	$ cts.	$ cts.
American Bank Note Co.	For printing stamps	87 15	
Pritchard & Andrews Co., The	Meter seals, model dates, repairs, etc.	121 40	
Harrison & Co	Glass tubes	39 60	
	Total general gas contingencies		248 15
	Grand total		29,841 76
	ADD—Printing	321 74	
	Stationery	495 00	
	Lithographing	90 00	
			906 74
	Authorized disbursements (less superannuation, retirement and guarantee)		30,748 50
	ADD—Balances due by Inspectors March 31, 1908		212 88
			30,961 38
	LESS—Balances due by Inspectors March 31, 1907		212 88
	Actual disbursements, agreeing with statement No. 22, page 62		30,748 50

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

W. J. GERALD.
Deputy Minister.

APPENDIX B—*Continued.*

No. 7.—DETAILS of Electric Light Inspection for the Year ended March 31, 1908.

To whom paid.	Service.	Deductions for Guarantee.	Amounts paid.	Total amounts paid.
	Belleville.	$ cts.	$ cts.	$ cts.
Johnston, C. W.	Salary as Inspector for the year	1 80	148 20	
	Contingencies		474 36	
				622 56
	Hamilton.			
McPhie, D	Contingencies			162 65
	London.			
Nash, A. F.	Contingencies			352 88
	Ottawa.			
Roche, H. G.	Contingencies			198 05
	Owen Sound.			
Graham, W. J.	Contingencies			2 00
	Toronto.			
Johnstone, J. K.	Contingencies			2,028 65
	Montreal.			
Aubin, A.	Contingencies			81 55
	Quebec.			
LeVasseur, N.	Contingencies			104 03
	Sherbrooke.			
Simpson, A. F.	Contingencies			59 80
	St. Hyacinthe.			
Provost, J. E.	Salary as Inspector for the year	1 80	298 20	
	Contingencies		132 50	
				430 70
	Three Rivers.			
Robitaille, G. W.	Salary as Inspector from April 24, 1907, to March 31 1908	1 65	466 33	
	Contingencies		35 43	
				501 76
	St. John.			
Wilson, J. E.	Contingencies			237 01
	Halifax.			
Ritchie, A. J.	Contingencies			268 54
	Charlottetown.			
Bell, J. H.	Contingencies			76 30

APPENDIX B—*Continued.*

No. 7.—DETAILS of Electric Light Inspection for the Year ended March 31, 1908—*Continued.*

To whom paid.	Service.	Deductions for Guarantee.	Amounts paid.	Total amounts paid.
	Calgary.	$ cts.	$ cts.	$ cts.
Higman, O., jr...	Salary as Inspector for the year	1 80	398 20	
	Contingencies		525 36	
				923 56
	Winnipeg.			
Magness, R	Contingencies			271 05
	Victoria.			
Jones, R	Contingencies			44 80
	Yukon.			
Macdonald, J. F..	Salary as Inspector for the year	3 60		496 40
	Chief Electrical Engineer.			
Higman, O.	Salary as Chief Electrical Engineer for the year		2,499 96	
Evans, C. J	" Mechanic for the year		799 92	
Whyte, J. A.	" Inspector of Electricity from Oct. 1, 1907, to March 31, 1908		600 00	
Cole, N. R.	" Mechanician from Jan. 2 to Mar. 31, 1908		197 83	
McKell, M. E	" Stenographer		98 91	
	Salaries		4,196 62	
	Contingencies		1,275 99	
				5,472 61

APPENDIX B—*Continued.*

No. 7.—Details of Electric Light Inspection Expenditures for the Year ended March 31, 1908—*Concluded.*

To whom paid.	Service.	Amounts paid.	Total amounts paid.
	General Contingencies.	$ cts.	$ cts.
Ahern & Soper, Ltd.	General electrical supplies, repairs, &c.	1,890 85	
Shedrick, Rigby Co., Ltd.	Repairs of electrical apparatus	45 10	
Weston Electrical Instruments Co.	" " "	96 89	
Crompton & Co., Ltd.	Electrical apparatus, &c.	457 02	
Vandeleur, J. F. B.	" "	321 00	
Trumbull Electric Manufacturing Co., The	" "	132 67	
Garioch, Godard & Co.	" "	5 00	
Cutter & Hammer Mfg. Co.	Two combination motors	45 00	
Eastern Carbon Works Co.	300 carbon plates	19 50	
Stevens, G. H.	20 pieces of Canadian marble	37 50	
Driver-Harris Wire Co.	10 lbs. climax wire	8 75	
Lyman, Sons & Co	20 lbs. mercury	15 20	
Canadian Rubber Co., The	197 washers and 15 pieces of rubber	34 18	
Packard Electric Co., The	Electrical lamps	8 50	
Canadian General Electric Co., Ltd.	" "	120 00	
McHarg, W. H.	Law costs, Rex *vs.* P. Stewart	20 00	
Kelwin & White, James	Electrical apparatus	329 87	
John Bertram & Son Co., The	Lathe complete and extras	545 20	
National Drug & Chemical Co	188 lbs. of sulp. acid and carboy	7 64	
Gould Storage Battery Co.	Eight insulators	0 99	
Ottawa Hardware Co.	Supplies	0 30	
Thornton & Truman	Repairs, locks, keys, &c	91 75	
Pritchard & Andrews Co., The	Stamps and repairs	18 75	
Collector of Customs	Duty paid on imported goods	201 18	
Canadian Express Co.	Express charges	38 06	
American Express Co.	" "	33 81	
Dominion Express Co.	" "	13 45	
Canadian Pacific Railway Co.	Freight	3 55	
Grand Trunk Railway Co.	"	12 36	
Himsworth, W.	To pay for sundries	0 75	
	Total electric light contingencies		4,554 82
	Export of Electric Power Contingencies.		
Higman, O.	Travelling expenses, &c.		456 80
	Grand total		17,346 52
	Add—Printing	90 24	
	Stationery	369 99	
			460 23
	Actual disbursments agreeing with statement No. 23, page 66		17,806 75

W. J. GERALD,
Deputy Minister.

Inland Revenue Department,
Ottawa, June 11, 1908.

APPENDIX B—*Continued.*

No. 8.—List of Permanent Employees of the Inland Revenue Department employed on Salary, during the Year ended March 31, 1908.

Names.	Services.						
	Inside.	Excise.	Weights and Measures.	Gas.	Electric Light Inspection.	Preventive.	Food. Inspection.
Aaron, J. D		1					
Adam, A. R		1					
Alexander, Thos		1					
Allen, G. A		1					
Alteman, Peter J		1					
Amor, Wm		1					
Andrews, A. A		1					
Arcand, D		1					
Armstrong, Walter		1					
Aubin, A				1	1		
Aubin, Chs				1	1		
Auger, L. H		1					
Baby, W. A. D		1					
Baikie, D		1					
Barber, J. S		1					
Barnes, G		1					
Barrett, J. K		1					
Barry, James			1				
Bayard, Gilbert A		1					
Beard, Miss M. H	1						
Beasley, M. C		1					
Beaulac, J. H			1				
Beaulieu, J. B		1					
Bélair, A. (Plessis dit)		1					
Béland, F. X. W. E				1	1		1
Bélisle, E							1
Bell, J. H				1	1		
Belleperche, A. J. E		1					
Belyea, T. H		1					
Bénéteau, S		1					
Bennett, James		1					
Benoit, L. V		1		1			
Bergeron, R. J		1					
Bernard, N. J. D		1					
Bernier, Jean A			1				
Bernier, J. Auguste		1					
Berry, H. L		1					
Bickle, J. W		1		1			
Bishop, J. B		1					
Blackman, C		1					
Blethen, C. W		1					
Blyth, Alex		1					
Bolduc, Ephrem			1				
Bond, M. B				1			
Bonner, J. D					1		
Boomer, J. B		1					
Boudet, E			1				
Bourget, L. J			1				
Bourget, O		1					
Bourgeois, C		1					
Bousquet, J. O		1					
Bouteiller, G. A		1					
Bowen, F. C		1		1	1		
Bowman, Allan		1					
Boyd, J. F. S		1					
Boyd, S. I		1					
Boyle, P		1					
Brabant, J. B. G. N		1					
Brain, A. F							

APPENDIX B—*Continued.*

No. 8.—List of Permanent Employees of the Inland Revenue Department, 1907-1908—*Continued.*

Names.	Services.						
	Inside.	Excise.	Weights and Measures.	Gas.	Electric Light Inspection.	Preventive.	Food Inspection.
Breen, John			1				
Brennan, D. J.		1					
Brennan, John		1					
Brentnall, F. F.		1					
Bridgman, M. W.		1					
Broadfoot, S.		1		1			
Brodeur, P. E. S.	1						
Brown, W. J.		1					
Browne, G. W.		1					
Burke, T.		1					
Burns, R. J.		1					
Byrne, W. P.		1					
Cahill, J. H.		1					
Cahill, J. W.		1					
Cameron, D. M.		1					
Campeau, F. R. E.	1						
Carroll, D.		1					
Carroll, F. P.		1					
Carter, William	1						
Caven, W.		1					
Chagnon, C. P.		1					
Chalus, J. O.			1				
Charbonneau, E.	1						
Chartier, Etienne		1					
Chateauvert, G. E.	1						
Cheseldine, J. H.		1					
Chilver, F. W.		1					
Chisholm, J. J.			1				
Chisholm, W. N.		1					
Clark, James Alfred		1					
Clarke, Thomas		1					
Clegg, Jos.			1				
Codd, Herber J. S.		1					
Code, Abraham		1					
Coleman, Charles		1					
Coleman, J. J.		1					
Coles, F. H.		1					
Comte, L. A. A. J.		1					
Conklin, W. McE.		1					
Cook, W. R.		1					
Costello, J. W.			1				
Costigan, J. J.		1					1
Cotter, W. F.				1	1		
Coughlin, D.			1				
Coulter, Alex.		1					
Courchesne, P. H. E.		1					
Courtney, J. J.		1					
Coutts, J. J.		1					
Crevier, J. H.		1					
Cryderman, C. W.		1					
Dager, H. J.		1					1
Dalton, M. J.		1					
Daoust, J. A.			1				
Daveluy, J. P.		1					
David, T.		1					
Davidson, E.							1
Davis, T. G.		1					
Davy, Edward			1				
Dawson, W.		1					

APPENDIX B—*Continued.*

No. 8.—List of Permanent Employees of the Inland Revenue Department, 1907-1908—*Continued.*

Names.	Services.						
	Inside.	Excise.	Weights and Measures	Gas.	Electric Light Inspection.	Preventive.	Food Inspection.
Deely, F				1			
Deland, A. N		1					
Dennis, W. A				1	1		
Desaulniers, E. L	1						
Desaulniers, J. E. A		1					
Dessert, V			1				
Dibblee, William		1					
Dick, J. W		1					
Dickson, C. T		1					
Dingman, N. J		1					
Dixon, H. G. S		1					
Doyle, B. J		1					
Doyle, E. F	1						
Doyon, J. A	1						
Dumaine, J. D		1					
Dumbrille, R. W		1					
Dumouchel, Léandre		1					
Dunlop, J. P		1					
Duplessis, C. Z		1					
Dustan, W. M			1				
Dwyer, D. T		1					
Earl, R. W		1					
Egan, Wm		1					
Egener, A		1					
Elliott, T. H		1					
Elliott, W. J		1					
Evans, C. J					1		
Evans, G. T		1					
Fahey, Ed		1					
Falconer, James		1					
Falconer, R. H		1					
Ferguson, John C		1					1
Fiddes, James		1					
Fielding, Laura G		1					
Findlay, R			1				
Findley, Hugh			1				
Fitzgerald, E. W			1				
Fitzpatrick, W. J		1					
Fleming, C		1					
Fletcher, R. W		1					1
Floody, E						1	
Flynn, D. J		1					
Forest, E. R		1					
Forest, M		1					
Fortier, J. J. O		1					
Foster, J. Henry		1					
Fowler, George	1						
Fox, J. D		1					
Fox, Thomas		1					
Frame, Archibald			1				
Frankland, H. R		1					
Fraser, P		1					
Freed, A. T			1				
Freeland, Anthony		1					
Furlong, C. J	1						
Fyfe, James			1				
Galipeau, J. B. N			1				
Gallaher, T				1			
Gamache, J. N		1					

APPENDIX B—*Continued.*

No. 8.—List of Permanent Employees of the Inland Revenue Department, 1907-1908—*Continued.*

Names.	Services.						
	Inside.	Excise.	Weights and Measures.	Gas.	Electric Light Inspection.	Preventive.	Food Inspection.
Garielpy, L. N.		1					
Gauvin, E.		1					
Geldart, O. A.		1					
George, John		1					
Gerald, C.		1					
Gerald, W.H		1					
Gerald, W. J.	1						
Gervais, J. H.	1						
Gilby, W. F.			1				
Gillies, Archibald L.		1					
Girard, Iréné		1					
Goodhue, M.L.E.B.	1						
Goodman, A. W.		1					
Gorman, Arthur M.		1					
Gosnell, T.S.		1					
Gow, J. E.		1					
Graham, A. L.		1					
Graham, W. J.		1		1			
Graham, W. T.		1					
Grant, H. H.		1					
Gray, R. S.		1					
Gravel, A. I.			1				
Graveline, D. P.		1					
Griffith, M. L.	1						
Grimason, Thomas		1					
Grosbois (de), Chas. B		1					
Guay, Alphonse			1				
Guay, A. E.		1					
Hagan, James		1					
Hagerty, B.	1						
Hall, H. C		1					
Halliday, W. A.	1						
Hammond, T. W.		1					
Hanley, A		1					
Hanlon, J. R.		1					
Harbottle, N.		1					
Harwood, J. O. A.		1					
Hawkins, W. L.		1					
Hayhurst, T. H.		1					
Hayward, W. J.			1				
Hébert, C. D.		1					
Hébert, J. A. P.			1				
Helliwell, H. N.		1					
Henderson, W.		1					
Henwood, George		1					
Hesson, C. A.		1					
Hicks, W. H.		1		1			
Higman, O.				1	1		
Higman, O., Jr.					1		
Himsworth, Wm	1						
Hinchey, E. H.		1					
Hobbs, G. N.		1					
Hodder, W. E.		1					
Hogan, James		1					1
Howard, W. W. S.		1					
Howell, Thomas		1					
Howie, A.		1					
Hubley, H. H.		1					
Hudon, L. E.		1					

APPENDIX B—*Continued.*

No. 8.—List of Permanent Employees of the Inland Revenue Department, 1907-1908—*Continued.*

Names.	Services.						
	Inside.	Excise.	Weights and Measures.	Gas.	Electric Light Inspection.	Preventive.	Food Inspection.
Hughes, Henry			1				
Hughes, P. A.	1						
Hughes, R. A.			1				
Hunter, W. M.				1	1		
Hurst, Levi B		1					
Iler, B.		1					
James, T. C.		1					
Jameson, S. B.		1					
Jamieson, R. C		1					
Jeffrey, A. J.		1					
Johnson, J. J		1					
Johnson, Wm.			1	1	1		
Johnston, C. W.			1	1	1		
Johnston, H. J.		1					
Johnstone, J. K.				1	1		
Jones, Andrew.		1					
Jones, Richard.		1		1			
Jubenville, J. P.		1					
Kearney, D. J.		1					
Keay, W. S.		1					
Keeler, G. S.		1					
Keilty, T.		1					
Kelly, Daniel			1				
Kelly, J. T.						1	
Kenning, J. H.		1					
Keogh, P. M.		1					
Kidd, Thomas							1
King, R. M.		1					
Kirkpatrick, H. J.		1					
Knowles, C.			1				
Labelle, L. V.		1					
Ladouceur, J.							1
Laidman, Richard H.			1				
Lambert, J. A.		1					
Lamoureux, J. A.		1					
Lane, T. M		1					
Langelier, Francois		1					
Laporte, Geo.		1					
LaRivière, A. C.		1					1
LaRue, J. B. Alexandre		1					
Laurence, G. C.			1				
Laurier, J. L.		1					
Lawless, E. M.	1						
Lawlor, H.		1					
Lawlor, John J		1					
LeBel, J. A. W.			1				
Leblanc, F. X.			1				
Ledoux, Alexina.		1					
Lee, Edward.		1					
Lemoine, A.							1
LeMoine, Jules.		1					
LeVasseur, N.				1	1		
Liddle, D.			1				
Long, W. H. A.		1					
Longtin, H.		1					
Love, G. J		1					
Lyons, E.		1					
Macdonald, A. B.		1					
Macdonald, J. A.			1				

APPENDIX B—*Continued.*

No. 8.—List of Permanent Employees of the Inland Revenue Department, 1907-1908—*Continued.*

Names.	Service.						
	Inside.	Excise.	Weights and Measures.	Gas.	Electric Light Inspection.	Preventive.	Food Inspection.
Macdonald, J. F			1	1	1		
Macfarlane, A. C							1
Macgregor, D. C		1					
Mackenzie, J. H		1					
Mager, Joseph G			1	1	1		
Magness, Robt			1	1	1		
Mahoney, H		1					
Mainville, C. P		1					
Male, Thomas				1			
Maranda, N. A		1					
Marentette, Alex			1				
Marin, L. H		1					
Marion, H. R		1					
Marrion, A. H		1					
Marshall, I. N		1					
Marshall, R			1				
Martin, N		1					
Mason, F		1					
Martineau, O. E. J		1					
Maurice, E		1					
Metcalf, W. F		1					
Melville, T. R		1					
Miller, J. E		1		1	1		
Miller, W. F		1					
Millier, Elie		1					
Milligan, R. J			1				
Milliken, E		1					
Milot, J. F		1					
Montgomery, W. H		1					
Moore, T		1					1
Moreau, A		1					
Morin, J. P			1				
Morris, T. H		1					
Mulhern, M. M		1		1			
Munro, H. D		1		1	1		
Murdoch, James			1				
Murphy, F. C				1	1		
Murray, A. E		1					
Murray, David		1					
McArthur, G. H		1					
McCloskey, J. R		1					
McCoy, Wm		1					
McCraney, H. P		1					
McCuaig, Aug. F		1					
McCullough, A	1						
McCutcheon, H		1					
McDonald, A. J		1					
McDonald, A. W			1				
McFarlane, J			1				
McFee, C		1					
McGill, A							1
McGowan, J		1					
McGuire, L. J		1					
McGuire, T		1					
McKay, R			1				
McLenaghan, N		1					
McNiven, J. D		1					
McPherson, E. A		1					
McPhie, Donald				1	1		

APPENDIX B—*Continued.*

No. 8.—List of Permanent Employees of the Inland Revenue Department, 1907-1908—*Continued.*

Names.	Services.						
	Inside.	Excise.	Weights and Measures.	Gas.	Electric Light Inspection.	Preventive.	Food Inspection.
McPhie, W. H.				1	1		
McSween, James		1					
Nash, A. F.				1	1		
Nash, S. C.		1					
Neil, James		1					
Newby, F.	1						
Newsome, I.		1					
Nicholas, B. C.	1						
Noonan, H. T.		1					
Normandin, G.		1					
O'Brien, E. C.		1					
O'Brien, James		1					
O'Brien, J. F.		1					
O'Donnell, J.		1					
O'Donnell, M. J.		1					
O'Donohue, M. J.		1					
O'Flaherty, E. J.		1					
O'Flaherty, M. J.				1			
O'Leary, T. J.		1					
Olivier, H.		1					
Orr, Henry N		1		1			
Ostiguy, L. R.	1						
O'Sullivan, D		1					1
Panneton, G. E.		1					
Pape, James				1	1		
Parent, F.		1					
Parent, Paul			1				
Parker, Thomas			1				
Parkinson, Edward B.		1					1
Parson, C. H		1					
Patry, J. H.		1					
Patterson, C. E. A.		1					
Pelletier, N. G.		1					
Petit, J. B.			1				
Pleasance, W.		1					
Poirier, J. N.		1					
Poitras, Wilfrid		1					
Pole, C. W.		1					
Popham, F. H.		1					
Portelance, P. A.		1					
Powell, J. B.		1					
Power, J. F.		1					1
Préfontaine, F. H.			1				
Prosser, Elijah						1	
Provost, I. E.					1		
Quain, Redmond	1						
Quinn, J. D.		1					
Ralston, T.		1					
Renaud, A. H.		1					
Rennie, George		1		1			
Ridgman, A. H.		1					
Rinfret, C. I.		1					
Ritchie, R		1					
Robins, S. W.			1				
Roche, H. G.				1	1		
Rork, T.		1		1			
Rose, John A.		1					
Ross, H. E.		1					
Rouleau, C. E.		1					

APPENDIX B—*Continued.*

No. 8.—List of Permanent Employees of the Inland Revenue Department, 1907-1908—*Continued.*

Names.	Services.						
	Inside.	Excise.	Weights and Measures.	Gas.	Electric Light Inspection.	Preventive.	Food Inspection.
Rouleau, J. C., jr		1					1
Rousseau, Elzéar H		1					
Rowan, W. E		1					
Roy, C. E			1				
Roy, L. G	1						
Rudkins, W		1					
Ryan, Wm		1					
Saucier, X		1					
Scanlan, T. J		1					
Schram, R. L. H		1					
Schuler, F. C		1					
Scullion, W. J		1					
Shanacy, M		1		1	1		
Shaw, J. F	1						
Simpson, A. F		1		1	1		
Simpson, W. A		1					
Slattery, R		1					
Slattery, Thomas			1				
Sloan, W		1					
Smith, J. C			1				
Snowdon, J. W		1					
Sparling, J. W		1					
Spence, F. H		1					
Spereman, J. J		1					
Standish, J. G		1					
Stratton, W. C		1					
Stuart, W. E				1			
St-Michel, F. X		1					
Talbot, John		1					1
Taylor, G. W		1					
Tétrault, J		1					
Thérien, J.F			1				
Thomas, J. S			1				
Thomas, F. W		1					
Thomas, Robert		1					
Thorburn J		1					
Thurber, J		1					
Till, T. M		1					
Timmons, R		1					
Tobin, Thomas		1					
Tomlinson, W. M			1				
Tompkins, P		1					
Toupin, F. X. J. A		1					
Tracy, J. P		1					
Trasher, W. A		1					
Trumpour, G	1						
Valentine, Adam, jr		1					
Valin, J. E	1						
Valin, J. A. G							1
Verner, Thomas H		1					
Waddell, S. J		1					
Walker, J. H		1					
Walsh, Daniel J		1					
Walsh, W. H		1					
Wardell, R. S. R		1					
Watson, V. M	1						
Waugh, R. J			1				1
Webbe, C. E. A		1					
Westman, T	1						

APPENDIX B—*Continued.*

No. 8.—List of Permanent Employees of the Inland Revenue Department. 1907-1908—*Continued.*

Names.	Services.						
	Inside.	Excise.	Weights and Measures.	Gas.	Electric Light Inspection.	Preventive.	Food Inspection.
Wheatley, Alfred E			1				
White, H. E		1					
White, J. B		1					
Whitehead, J. P		1					
Whyte, J. A			1	1	1		
Wilson, David		1					
Wilson, H. R		1					
Wilson, J. E				1	1		
Winsor, John A			1				
Wolfenden, William		1		1			
Wood, James A		1					
Woodward, G. W		1					
Wright, Robert J			1				
Wright, S. E							1
Yetts, R. P	1						
Young, R. E		1					
Totals	32	350	67	45	32	3	23

APPENDIX B—*Continued.*

No. 9.—List of Permanent Employees of the Inland Revenue Department employed on Salary during only a portion of the Year ended March 31, 1908.

Names.	Period.	Services.						
		Inside.	Excise.	Weights and Measures.	Gas.	Electric Light Inspection.	Preventive.	Adulteration of Food.
Allen, A. T.	From January 2, 1908 to March 31, 1908	1						
Bélisle, E.	" April 27, 1907 to March 31, 1908							1
Bugeaud, J. F.	" January 1, 1908 to March 31, 1908			1				
Burns, John	April 1, 1907 to October 31, 1907	1						
Butler, F. H.	" January 1, 1908 to March 31, 1908			1				
Caldwell, A. B.	" January 1, 1908 to March 31, 1908			1				
Casey, F. J.	" January 1, 1908 to March 31, 1908		1					
Casey, John	" April 1, 1907 to April 30, 1907		1					
Cole, N. R.	" January 2, 1908 to March 31, 1908					1		
Collins, D.	" April 1, 1907 to September 30, 1907			1				
Cook, W. J.	" January 1, 1908 to March 31, 1908		1					
Crawford, W. P.	" April 1, 1907 to April 30, 1907		1					
Cruickshank, J. L.	" January 1, 1908 to March 31, 1908			1				
Cummiford, F. D.	" January 1, 1908 to March 31, 1908		1					
Desmarais, H. F.	" April 15, 1907 to March 31, 1908		1					
Dontigny, H.	" June 4, 1907 to March 31, 1908		1					
Dowling, D. J.	" January 1, 1908 to March 31, 1908		1					
Dudley, W. H.	" April 1, 1907 to August 31, 1907		1					
Farmer, R. C.	" January 1, 1908 to March 31, 1908		1					
Gervais, J. A.	" January 1, 1908 to March 30, 1908		1					
Girldlestone, R. J. M.	" March 1, 1907 to March 17, 1908		1					
Gill, William	" April 1, 1907 to December 1, 1907		1					
Gilpin, R. R.	" September 7, 1907 to March 31, 1908		1					
Goudie, D. A.	" August 19, 1907 to March 31, 1908		1					
Hagarty, P.	" April 1, 1907 to May 30, 1907		1					
Hiscott, J. O.	" July 2, 1907 to March 31, 1908		1					
Howden, R.	" April 1, 1907 to December 31, 1907		1					
Howson, G. H.	" February 11, 1908 to March 31, 1908			1				
Hudon, L. E.	" April 1, to May 31, 1907	1						
Huggett, A. P.	" January 1, 1908 to March 31, 1908		1					
Ironside, G. A.	" April 1, 1907 to September 30, 1907		1					
Jeffrey, E. J.	" April 1, 1907 to June 14, 1907		1					
Kenny, John	" April 1, 1907 to July 31, 1907		1					
Kylier, R.	" January 1, 1908 to March 31, 1908			1				
Lespérance, J. A.	" October 1, 1907 to March 31, 1908		1					
Logan, John	" April 1, 1907 to April 30, 1907		1					
Lyons, A.	" May 20, 1907 to March 31, 1908			1				
Macfarlane, T.	" April 1, 1907 to June 30, 1907							1
Mann, W.	" April 15, 1907 to March 31, 1908				1	1		
Marin, N. H.	" March 1, 1908 to March 31, 1908		1					
Mitchell, J. L.	" January 1, 1908 to March 31, 1908		1					
Morgan, E. J.	" June 19, 1907 to March 31, 1908		1					1
Morrisette, F. R.	" April 1, 1907 to April 30, 1907		1					
McAloney, J. A.	" April 1, 1907 to January 31, 1908		1	1	1			
McKell, M. E. E.	" January 2, 1908, to March 31, 1908					1		
Noonan, J. M.	" January 1, 1908, to March 31, 1908		1					
Parkin, M. R.	" March 2, 1908, to March 31, 1908		1					
Publow, W. J.	" January 1, 1908, to March 31, 1908		1					
Renahan, M. J.	" March 9, 1908, to March 31, 1908				1	1		
Rickey, J. A.	" June 10, 1907, to March 31, 1908							1
Ritchie, A. J.	" April 1, 1907 to October 31, 1907				1	1		
Robitaille, G. W.	" April 24, 1907, to March 31, 1908					1		
Sanderson, A. E.	" April 1, 1907, to April 21, 1907							
Scanlan, T. J.	" May 1, 1907, to March 31, 1908		1					
Shaw, F. D.	" August 1, 1907 to March 31, 1908		1					1
Shaw, J.	" February 24, 1908, to March 31, 1908		1	1	1			
Skelton, A. R.	" April 11, 1907, to March 31, 1908				1	1		
Smith, B. H.	" March 2, 1908, to March 31, 1908		1					
Spicer, H.	" January 1, 1908, to March 31, 1908			1				
Sprague, F. W.	" January 1, 1908, to March 31, 1908		1					

APPENDIX B—*Concluded.*

No. 9.—List of Permanent Employees of the Inland Revenue Department employed on Salary, &c.—*Concluded.*

Names.	Period.	Services.						
		Inside.	Excise.	Weights and Measures.	Gas.	Electric Light Inspection.	Preventive.	Adulteration of Food.
Stanley, F. C.	From January 1, 1908, to March 31, 1908	..	1	....	....	....	...	....
Stuart, Jas.	" March 1, 1907, to December 31, 1907	....	1	....	...	...	....	....
Swannell, F. W.	" April 1, 1907, to April 30, 1907	....	1	1	....	....	....	....
Thomson, J. C.	" February 11, 1908, to March 31, 1908	..	....	1	..	...	....	....
Tytler, Mrs. J. M.	" September 12, 1907, to March 31, 1908	....	1	1	1	1	....	...
Verner, F.	" April 1, 1907, to August 31, 1907	....	1	....	....	....	....	....
Wilson, J. C.	" January 1, 1908, to March 31, 1908	....	....	1	....	....	....	....
Winsor, J. A.	" February 4, 1908, to March 31, 1908	....	1	...	....	....	....	..
Wood, H. M.	" January 6, 1908, to March 31, 1908	....	1	....	....	....	....	....
	Totals	3	44	15	7	8	....	5

No. 10.—Number of Permanent Employees of the Inland Revenue Department and the different services in which they were employed during the Year ended March 31, 1908—*Concluded.*

RECAPITULATION.

Employed during the year	488
" a portion of the year	69
Total	557

Services.

Inside	35
Excise	361
Weights and Measures	71
Gas	6
Electric Light	7
Preventive	3
Food	13
Excise, and Weights and Measures	1
" Weights and Measures and Gas	2
" and Gas	11
" Gas and Electric Light	5
" and Food	13
" Weights and Measures, Gas and Electric Light	1
Weights and Measures, Gas and Electric Light	6
" and Food	1
Gas and Electric Light	20
Gas, Electric Light and Food	1
	557

W. J. GERALD,
Deputy Minister.

Inland Revenue Department,
Ottawa, June 11, 1908.

INDEX

		Page.
Aaron, J. D.	Salary	125
Acadian Recorder, Halifax	Subscription	149
Acadiensis, The, St. John, N. B.	"	148
Acetic Acid	Duty accrued	22-23
" Return of Manufactures		114
" " "	Comparative Statement for 1906–1907 and 1907–1908	114
" Revenue		6-8
" "	Comparative Statement showing monthly increase or decrease for 1906–1907 and 1907–1908	34-35
Adam, A. R.	Duty-pay	140
"	Salary	128
Adulteration of Food, Expenditure, page 17	Details of	144-146
"	Fees	20
"	Vote for	67
" Fees	Monthly Reports	24-31
" Penalties	" "	24
Ahearn, Thomas	Lessee	116
Ahearn & Soper, Ltd	Electrical Supplies, &c	163
Ahern, J.	Law costs	146
Alexander, T.	Contingencies and salary	124
"	Distribution of seizures	142
Allen, A. T.	Salary	147
Allen, G. A.	Distribution of seizures	143
"	Duty-pay	140
"	Salary	133
Allen, S.	Refunds	51
Allison, John B.	Commission	138
Alteman, P. J.	Salary	122
American Bank Note Co	Contingencies	136, 144, 154, 160
American Express Company, The	"	163
American Tobacco Co. of Canada, Ltd., The	Refunds	43, 44, 45, 46, 47, 48, 49, 50
Amor, William	Salary	123
Amount voted and expenditure authorized for each service		67
Amyot, G. E.	Refunds	38, 39, 40
Amyot & Gauvin	"	38
Anderson, J. J.	Commission	138
Anderson & Co.	Refunds	37-41
Andrews, A. A.	Salary	129
Andrich, E. C.	Refunds	40
Appendix, "A"	Statistics	71
" "B"	Details of expenditure	122
Arcand, D.	Distribution of seizures	142
"	Salary	130
Archibald, L. C.	Lessee	118
Atkins, W.	Refunds	46
Aubin, A.	Contingencies	161
"	" and salary	158
Aubin, C.	Salary	158
Audette, L. A.	Law stamps	19
Auger, B.	Gratuity	149
Auger, L. H.	Salary	131
Avenir du Nord L', St. Jerôme	Subscription	149
Baby, W. A. D.	Duty-pay	140
"	Salary	123
Baikie, D.	"	125
Bailey, E. R.	Provisional allowance	137
Bailey, John	Purchaser	120
Baldwin, A. H.	Lessee	116
Ballentine, A., jr.	Salary	123
Baltz, G. O.	Provisional allowance	137
Bank of British Columbia, The	Lessee	116
Bank of Montreal	"	116
Barbeau, Mrs. L.	Salary	154
Barber, J. S.	"	127
Barnes, G.	"	125-132
Barrett, J. K.	Contingencies and salary	135

		Page.
Barrett, P.	Provisional allowance	137
Barrie Brewing Co., Ltd., The	Refunds	37–41
Barrie Gas District	Contingencies and salary	156
Barry, H. D.	Refunds	44
Barry, J.	Contingencies and salary	152
Bauer, A.	Refunds	41
Bauld, Bros. & Co	"	46, 47, 49
Bayard, G. A.	Duty-pay	140
"	Salary	127
Beard, M. H.	"	147
Beasley, M. C.	"	123
Beauchesne, P. C.	Commission	138
Beaulac, J. H.	Salary	151
Beaulieu, J. B	"	130
Beauport Brewing Co., The	Refunds	38–43
Bélair, A. P.	Salary	129
Beland, F. X., W. E.	Salaries	144, 158
" "	Travelling expenses, &c	145
Bélisle, E.	Salary	144
"	Contingencies	145
Bell, A.	Commission	139
Bell, J. H.	Contingencies	161
"	Salary	158
Bell, N.	Refunds	43
Bell Telephone Co., The	Contingencies	148
Belleperche, A. J. E.	Salary	127
Belleville Electric Light District	Contingencies and salary	161
" Excise Division	" and salaries	122
" Gas District	" "	156
" Weights and Measures Division	" "	150
Behnsen, H. F. W.	Refunds	43
Belyea, T. H.	Contingencies and salary	131
"	Distribution of seizures	143
Bénéteau, S.	Salary	128
Benjamin, E. R.	Bill stamps	18
Bennett, James	Salary	124
Benoit, L. V.	Contingencies and salaries	130, 158
Bergeron, R. J.	Duty-pay	140
"	Salary	128
Berlin Gas Office	Contingencies and salary	156
Bernard, N. J. D.	Duty-pay	140
"	Salary	130
Bernhardt, V. P.	Refunds	40
Bernier, J. A.	Duty-pay	140
"	Salary	128
" Jean A.	"	152
Berry, H. L.	Duty-pay	141
"	Salary	127
Bertram, John & Son, Co., The	Contingencies	163
Bickle, J. W.	Contingencies and salary	156
"	Salary	125
Bill stamps—Distributors' Accounts		18
Billman, Chisholm & Co.	Refunds	48
Binney, J. W.	Commission	138
Bishop, J. B	Duty-pay	140
"	Salary	123
Bissell, C. H.	Duty-pay	140
Bixel, A	Refunds	40
Blackburn, R. *et al*	Lessees	116
Blackman, C.	Salary	123
Blain, A. F.	Duty-pay	140
Blair, Alex.	Commission	138
Blais, Narcisse	Lessee	116
Blethen, C. W	Salary	131
Blumensteil, I.	Refunds	44, 45
Blyth, A.	Duty-pay	140
"	Salary	122
Bolduc, E	"	152
Bollard, A.	Refunds	43, 44, 45, 47, 49, 50
Bond, M. B.	Salary	157
Bonded Excise Warehouse Licenses	Refunds	51
Bonded Factories	Inspector of	135
Boswell & Bros., Limited	Refunds	38, 43
Bonded Manufactures	Revenue	6, 8
Boomer, J.	Purchaser	120
Boomer, J. B.	Salary	126
Booth, J. R.	Lessee	116

SESSIONAL PAPER No. 12

		Page.
Boudet, E.	Salary	151
Bouchard, Jos	Duty-pay	140
Bourget, L. J.	Salary	151
Bourget, O.	Distribution of seizures	142
"	Duty-pay	141
"	Salary	130
Bourgeois, C.	"	128
Bourgeois, Eug.	"	148
Bourke, Dr. W.	Refunds	51
Bousquet, J. O.	Salary	129
Bouteillier, G. A.	Duty-pay	140
"	Salary	127
Bouthillier, E.	Refunds	58
Bowen, F. C.	Salaries	130, 151
Bowen, N. H.	Purchaser	120
Bowie & Co. Brewery Co. Ltd	Refunds	41
Bowman, A.	Salary	122
Bowman, M.	Food analyses	145
Boyd, A.	Commission	138
Boyd, J. F. S.	Salary	123
Boyd, S. I.	"	126
Boyle, P.	"	124
Brabant, J. B. G. N.	Distribution of seizures	142
"	Salary	129
Brain, A. F.	"	127
Brandon Brewing Co.	Refunds	38, 42
Brantford Excise Division	Distribution of seizures	142
" " "	Contingencies and salaries	122
Brassard, E.	Law costs	136, 146, 154
Breen, J.	Salary	150
Brener, A. H.	Refunds	44
Brennan, D. J.	Duty-pay	140
"	Salary	130
Brennan, J.	Duty-pay	140
"	Salary	127
Brentnall, F. F.	"	127
Breweries and Malt Houses	Inspector of	135
Bridge, Revenue		15
Bridgman, M. W.	Salary	125
British American Bank Note Co.	Contingencies	133
British Columbia Distillery Co., Ltd	Refunds	38, 42
British Columbia Excise District	Contingencies and salaries	135
Britton, W. H	Commission	138
Broadfoot, S.	Contingencies and salary	156
"	Salary	123
Brockville Gas District	Contingencies	156
Brodeur, P. E. S.	Salary	147
Brodeur, S. A.	Commission	138
Bronson Co., The	Lessees	116
Bronson & Weston	"	116
Bronson & Weston Lumber Co., The	"	116
Brook, Joseph	Tenant	120
Brown, G.	Commission	138, 139
Brown, Jas.	Salary	154
Brown, W. J.	Duty-pay	140
"	Salary	122
Bruce, G. B.	Provisional allowance	137
Bryson Graham & Co	Contingencies	146, 148
Buckingham and Cumberland Ferry	Lessee	15
Buffalo and Point Abinot Ferry	"	15
Bugeaud, J. T.	Salary	152
Building, Ouellette Avenue, Windsor, Ont.	Lessee	15
Buildings	Revenue	15
Bulletin des Recherches Historiques, Lévis, Que.	Subscription	148
Bulletin, Le, Montreal	"	148
Burgess, Thomas	Salary	154
Burke, T.	Contingencies and salary	135
Burns, John	Salary	147
Burns, R. J	Salary	127
Burrow, Stewart & Milne Co., Ltd	Contingencies	136
Butler, F. H.	Salary	151
Butterworth & Co.	Contingencies	154
Byrne, W. P	Duty-pay	140
"	Salary	126
Cahill, J. H	"	130
Cahill, J. W.	Duty-pay	140
"	Salary	128

		PAGE.
Calcutt, Henry	Refunds	37, 39, 43
Caldwell, A. B.	Salary	152
Calgary Electric Light District	Contingencies and salaries	162
" Excise Division	" "	133
" "	Provisional allowance	137
" Weights and Measures Division	Contingencies and salaries	153
" " "	Provisional allowance	154
" Wine & Spirits Co	Refunds	41
Cameron, D. M	Duty-pay	141
"	Salary	123
Cameron R	Law stamps	19
Campbell, G	Commission	139
Campeau, F. R. E	Salary	147
Canada Francais, St. Jean	Subscription	148
Canada, Le, Montreal	"	148
Canada Malting Co. Ltd	Refunds	38, 41, 42
Canadian Bridge Co., The	"	51
Canadian Express Co	Freight	136, 149, 154, 155, 163
Canadian General Electric Co	Contingencies	163
Canadian Pacific Railway Co	Freight	136, 148, 149, 154, 163
" " "	Lessees	118
Canadian Rubber Co. The	Contingencies	136, 163
Canadian Transport Co	"	154
Canadian Twist Tobacco	Quantity taken for consumption	22, 23
Canadien, Le, Chatham	Subscription	148
Cape Breton, Weights and Measures Division	Contingencies and salary	152
Capital Brewing Co., Ltd. The	Refunds	37, 41
Capital Planing Mill, Co	Contingencies	136, 155
Carley, John	Gratuity	149
Carling, T. H	Refunds	37, 40, 41
Carroll, D	Salary	131
Carroll, F. P	"	132
Carroll, W. F	Law costs	136
Carter, William	Salary	147
Casey, F. J	"	131
Casey John	"	124
Casual Revenue	Monthly deposits	24 to 31
Catholic Register, Toronto	Subscription	149
Cauchon, H	Commission	138
Caven, W	Distribution of seizures	142
"	Salary	128
Chagnon, C. P	"	128
Chalus, J. O	Contingencies and salary	151
Charbonneau, E	Salary	147
Charlottetown Electric Light District	Contingencies	161
" Excise Division	" and salaries	132
" "	Distribution of seizures	143
" Gas District	Contingencies and salary	158
" Weights and Measures Division	" and salaries	153
Chartier, E	Salary	130
Chateauvert, G. E	"	147
Chemist and Surgeons' Supply Co	Contingencies	146
Cheseldine, J. H	Salary	123
Chevalier, John	Purchaser	120
Chief Analyst	Travelling and other expenses	145
Chief Electrical Engineer	Contingencies and salary	162
Chief Inspector of Weights and Measures	"	154
Chilver, F. W	Duty-pay	140
"	Salary	128, 134
Chisholm, F. W.	Provisional allowance	137
Chisholm, J. H	Law costs	146
Chisholm, J. J	Salary	153
Chisholm, W. N	"	125
Choat & Kern	Purchasers	120
Choquette, C. P	Travelling expenses	146
Chow Sam	Refunds	51
Chronicle, The, Halifax	Subscription	149
Chronicle, The, Montreal	"	148
Cie d'Imprimerie d'Arthabaskaville, La	"	148
Cigarettes—Number taken for consumption		22, 23
Cigars—Comparative statement of manufactures for 1906-1907 and 1907-1908		100-101
" License fees		22-23
" Licenses issued, materials used and number produced		98-99
" Number taken for consumption		22-23
" Returns of manufactures		98-99
" Revenue		6, 8
" "	Refunds	51

PAGE.

Cigars—Revenue Comparative monthly statement showing increase or decrease for 1905-1906 and 1907-1908. 34-35
" Warehouse Return. 102
" " " Comparative statement for 1906-1907 and 1907-1908. 103
Citizen, The, Ottawa ... Subscription. 148
Clair Station and Kent Ferry ... Lessee. 15
Clark, A. J ... Commission ... 138
Clark, J. A ... Salary ... 131
Clarke, T ... " ... 125
Cleary & Buchanan ... Law costs ... 136
Clegg, J ... Salary ... 150
Cobourg Gas District ... Contingencies and salary ... 156
Codd, H. J. S ... Salary ... 129
Code, A ... " ... 132
Cole, N. R ... " ... 162
Coleman, C ... " ... 127
Coleman, J. J ... Duty-pay ... 141
" ... Salary ... 130
Coles, F. H ... " ... 124
Colonial Cigar Co ... Refunds ... 44
Colonist, The, Victoria ... Subscription ... 149
Collector of Customs ... Customs duties ... 136, 146, 154, 163
Collins, D ... Salary ... 151
Commission on sales of Canada twist stamps, page, 12 Details of expenditure ... 139
" " " Vote for ... 67
" to Customs officers, page 12 ... Details of expenditure ... 138-139
" " ... Vote for ... 67
Commissioner of Customs ... Distribution of seizures ... 143
Comte, L. A. A. J ... " " ... 142
" " ... Salary ... 120
Conklin, W. M ... Salaries ... 133
Connell, J. F ... Refunds ... 39
Conroy, Mary ... Lessee ... 116
Contingencies—Adulteration of Food ... 144 to 147
" Departmental ... 148-149
" Electric Light, General ... 163
" Excise ... 136
" Gas, General ... 160
" Minor Revenues ... 144
" Weights and Measures, General ... 154
Controller of Stationery ... Stationery ... 148
Conway, T. D ... Commission ... 139
Cook W. J ... Duty-pay ... 140
" ... Salary ... 122
Cook, W. R ... " ... 127
Copland Brewing Co., Ltd ... Refunds ... 37, 41
Corballis, H. J ... Provisional allowance ... 137
Corby, H. Distillery Co ... Refund ... 40
Cornwall Excise Division ... Contingencies and salaries ... 122
" Gas District ... " salary ... 156
Corporation of Quebec ... Lessee ... 116
" Three Rivers ... " ... 116
Corriveau, O ... Duty-pay ... 141
Cosgrave Brewery Co., Ltd., The ... Refunds ... 41
Cosgrave Brewing Co., Ltd., The ... " ... 37
Costello, P. J ... Provisional allowance ... 137
" J. W ... " ... 154
" " ... Salary ... 153
Costigan, J. J ... Salaries ... 129, 144
" ... Travelling and other expenses ... 145
Cotter, W. F ... Salary ... 158
Coughlin, D ... " ... 151
Coulter, A ... Duty-pay ... 140
" ... Salary ... 127
Courchesne, P. H. E ... " ... 130
Courrier de l'Ouest, Edmonton ... Subscription ... 149
Courtney, J. J ... Salary ... 128
Courtright and St. Clair Ferry ... Lessee ... 15
Coutlee, L. M ... " ... 116
Coutts, J. J ... Salary ... 122
Crawford, W. P ... " ... 123
Creely, George ... Purchaser ... 120
Crevier, J. H ... Salary ... 129
Crompton & Co., Ltd ... Contingencies ... 163
Cross, A. E ... Refunds ... 38
Cross Point and Campbellton Ferry ... Lessee ... 1

		Page.
Cruishanks, J. L.	Salary	151
Cryderman, C. W	"	125
Cultivateur, Le, Montreal	Subscription	148
Cummiford, F. D	Duty-pay	141
" "	Salary	128
Cutter & Hammer Mfg. Co	Contingencies	163
Dager, H. J	Salaries	127, 144
"	Travelling expenses and purchases	145
Daily Herald, The, Nanaimo	Subscription	149
Daily News, The, Chatham	"	148
Daily News, The, Nelson	"	149
Daily Telegraph, The, Quebec	"	148
Daily Telegraph, The, St. John	"	148
Daily Star, The, Toronto	"	149
Dalgetty, James	Provisional allowance	137
Dalton, M. J	Salary	126
Daly, J	Commission	138
Daoust, J. A	Salary	151
Daveluy, J. P	Duty-pay	140
"	Salary	128
David, T	"	129
Davidson, E	"	144
" J	Duty-pay	140
Davidson Manufacturing Co	Refunds	51
Davies, D. B	Provisional allowance	137
Davis, T. H	Refuuds	37, 41
Davis, T. G	Salary	124
Davy, E	Contingencies and salary	153
Dawes, A. J	Refunds	37, 42
Dawson, W.	Duty-pay	140
"	Salary	122
Dawson Weights and Measures Division	Contingencies and salary	154
Deely, F	Provisional allowance	137
"	Salary	133
De Grosbois, C. B	"	130
Delahay, W	Provisional allowance	137
Deland, A. N	Salary	130
Dennis, W. A	"	156
Departmental Contingencies	Vote for	67
" Expenditure, page 42	Details of	148, 149
" Salaries	Vote for	67
Desaulniers, E. L	Salary	147
Desaulniers, J. E. A	Duty-pay	141
"	Salary	129
Desjardins, Alfred	Lessee	116
Desmarais, H. F	Salary	130
Dessert, V	"	152
Dethloff, Albert	Contingencies	146
Devlin, F	Refunds	41
Dewar, Colin	Lessee	116
Dewy, M. A	Refunds	49
Dibblee, W.	Salary	131
Dick, J. W	Duty-pay	140
"	Salary	127
Dickson, C. T	Contingencies and salary	124
Dingman, N. J	" "	135
Distilleries	Inspector of	135
Distribution of seizures		142 to 143
" " recapitulation of		143
District Inspectors—Excise	Contingencies and salaries	135
" Gas	Salary	159
" Weights and Measures	Contingencies and salary	154
Dixon, H. G. S	Salary	129
Dobbie, W. M	Provisional allowance	137
Dodd, William	Lessee	116
Dominion Brewing Co., Ltd., The	Refunds	37, 41
Dominion Express Co	Freight	136, 149, 154, 155, 163
Dominion Phosphate Co., Ltd	Lessee	116
Donald, J. T	Food analyses	146
Dontigny, H	Salary	131
Douglass, H	Commission	139
Doyle, B. J	Duty-pay	140
"	Salary	127
Doyle, E. F	"	147
Doyon, J. A	"	147
Dow & Co	Refunds	38, 42
Dowling, D. J	Salary	122

		Page.
Dring & Fage	Contingencies	136
Driver-Harris Wire Co	Contingencies	163
Dudley, W. H	Salary	127
Dumaine, J. D	Duty-pay	140
"	Salary	130
Dumbrille, R. W	"	123
Dumouchel, L	Distribution of seizures	142
"	Salary	128
Dundas and Waterloo Road—Lessee	Minor expenditure	15
Dunlop, C	Salary	127
Dunnville Bridge	Lessee	15
Duplessis, C. Z	Salary	131
Durocher, P. H	Refunds	41
Dustan, W. M	Contingencies and salary	153
Duty-pay to officers, page 12	Details of expenditure	140, 141
" "	Vote for	67
" other than special surveys	"	67
Dwyer, D. T	Salary	131
Dyer, J. J	Refunds	44
Dyer, W. R	"	44
Drewry, E. L	"	38, 42
Earl, R. W	Provisional allowance	137
"	Salaries	132, 145
"	Travelling and other expenses	145
Earle, R. R	Provisional allowance	137
Eastern Carbon Works Co	Supplies	163
Eastern Township Bank, for the A. L. Howard Co	Refunds	31
Eaton, C	"	46
Echo L', Quebec	Subscription	148
Edmundston Brewing and Malting Co., Ltd., The	Refunds	38
Edmundston and Maine Ferry	Lessee	15
Egan, W	Salary	125
Egener, A	Duty-pay	140
"	Salary	122
Eimer and Amend	Contingencies	146
Electric Light Inspection—Contingencies	Vote for	67
" " Expenditure, page 56	Details of	161 to 163
" " Revenue	Districts in account with revenue	64–65
" " "	Monthly deposits	24 to 31
" "	Stamps revenue	18
" Export power licences	Monthly deposits	24 to 31
" Registration fees	"	24 to 31
" " "	Refunds	51
Elkhorn Brewing Co	"	39, 42
Elliott, A	"	37, 43
Elliott, T. H	Salary	127
Elliott, W. J	"	123
Ellis, W. H	Food analyses	145
English, J. J	Commission	138, 139
Enterprise Brewing Co., The	Refunds	39, 42
Enterprise Printery, The, Saskatchewan	Subscription	148
Evans, C. J	Salary	162
Evans, G. T	"	127
Excise Contingencies	Vote for	67
" " on account of stamps	"	67
" Expenditure, pages 10 to 13	Details of	122 to 141
" " on account of stamps	Vote for	67
" General expenditure, pages 4 5	Details of	136
" Revenue	"	6 to 9
" " Comparative Statement showing increase or decrease for 1906–1907 and 1907–1908		34–35
" "	Monthly deposits	24 to 31
" Salaries	Vote for	67
" Seizures	Monthly deposits	24 to 31
" "	Refunds	51
" Statistics (Appendix A)		71
Expenditure—Adulteration of food, page 17	Details of	144–146
" Departmental, page 4	"	147
" Details of (Appendix B)		122 to 174
" Electric light inspection, page 66	Details of	161 to 163
" Excise, pages 10 to 13	"	122 to 141
" Gas inspection, pages 62–63	"	156 to 160
" General statement		4–5
" Sundry minor, page 20	Details of	144
" Weights and Measures, pages 57–58	"	150 to 155
Export of electric power	Vote for	67
Fagan, J. C	Food analyses	146

		Page.
Fahey, E	Salary	124
Fair, T. J. & Co., Ltd.	Refunds	45, 50
Fairley, W	Duty-pay	141
Falconer, J. E	"	140
"	Salary	128
Falconer, R. H.	"	127
Farmer, R. C.	"	131
Farmer's Advocate	Subscription	148
Farquharson & Grainger	Refunds	41
Ferguson, J. C.	Salaries	131, 145
"	Travelling and other expenses	145
Ferguson, J. D.	Commission	138, 139
Ferries—Revenues	Fees	15
Fertilizers	Inspection fees	20
" fees	Monthly deposits	24 to 31
Fiddes, J.	Salary	124
Fielding, L. G.	"	127
Findlay, R.	"	150
Findley, H.	"	153
Finlayson, Roderick	Lessee	116
Firstbrook, Jos.	Refunds	45
Fisher, John	"	39, 42
Fitzgerald, E. W.	Salary	150
Fitzpatrick, W. J.	"	131
Fleming, C.	"	124
Fletcher, R. W.	Provisional allowance	137
"	Salaries	133, 145
"	Travelling and other expenses	145
Fluhrer, John	Refunds	39, 42
Flynn, D. J.	Salary	127
Food, Adulteration of—Expenditure, page 17	Details of	144–146
" "	Vote for	67
Forest, E. R.	Salary	128
Forest, M.	"	128
Fort Erie and Buffalo Ferry	Lessee	15
Fort Steel Brewing Co	Refunds	39, 42
Fortier, J. J. O.	Salary	130
Fortier, J. M., Ltd	Refunds	43, 44, 45, 46, 47, 48, 49, 50
Forward, H. F.	"	51
Foster, H.	Salary	124
Fowler, G.	"	147
Fox, J. D.	"	128
Fox, Thomas	"	124
Frame, A	Contingencies and salary	152
Frankland, H. R.	" salaries	126
"	Distribution of seizures	142
Fraser, P.	Contingencies and salary	132
Fraser, R.	Commission	138
Fréchette, L. A.	Translation	146
Fredericton Gas District	Contingencies and salary	158
Freed, A. T.	" "	150
Freeland, A.	" salaries	124
Furlong, C. J.	Salary	147
Fyfe, Jas.	Contingencies and salary	154
"	Travelling expenses	155
Gallagher, T.	Salary	156
Gallipeau, J. P. N.	"	151
Gamache, J. N.	"	128
Garbatz, John	Purchaser	120
Gardner, W	Commission	139
Gariepy, L. N	Salary	129
Garrioch, Godard & Co.	Contingencies	163
Gas Inspection—Contingencies page 160	Vote for	67
" Expenditure, pages 60, to 53	Details of	156 to 160
" Inspection Districts in account with revenue		60-61
" Revenue	Monthly deposits	24 to 31
" Salaries	Vote for	67
" Stamps	Distributor's account	62-63
" "	Stamps revenue	60-61
Gass, Charles L.	Lessee	118
Gauvin, E.	Duty-pay	141
"	Salary	129, 130
Gauvin, M. & Co	Refunds	43
Gazette Printing Co	Subscription	148
Geldart, O. A	Salary	131
General Electric Light Contingencies		163
" Excise—Contingencies		136

SESSIONAL PAPER No. 12

		Page.
General Gas Contingencies		160
" Weights and Measures Contingencies		154
G. E. Tuckett & Son Co., Ltd., The	Refunds	43, 44, 45, 46, 47, 48, 49, 50
George J	Salary	125
Gerald, Charles	Duty-pay	140
"	Salary	126
Gerald, W. H	Contingencies	136
"	Duty-pay	140
"	Salary	126
Gerald, W. J	"	147
"	Travelling expenses	148
Gervais, J. A	Salary	129
Gervais, J. H	"	147
Gignac, R. F	Refunds	46, 50
Gilby, W. F	Salary	153
Gilhuly, R. H	Commission	138, 139
Gill, W	Contingencies and salary	135
Gillespie, &Co	Provisional allowance	136
Gillies, A. L	Salary	127
Gilpin, R. R	Commission	138
"	Salary	134
Girard, I	"	124
Girdlestone, R. J. M	Salaries	132, 153
Girwood Dr. G. P	Contingencies	146
Globe, The, Toronto	Subscription	148
Gold, Thos. F	Refunds	43
Golden Lion Brewing Co	"	38
Goldstein, B	"	43, 44, 45, 46, 47, 48, 49, 50
Gooderham & Worts Ltd	Contingencies	146
" "	Refunds	37, 41
Goodhue, M. L. E. B	Salary	147
Goodman, A. W	Duty-pay	140
"	Salary	125
Gordon, D. W	Lessee	116
Gorman, A. M	Salary	131
Gosnell, T. S	Contingencies and salary	132
Goudie, D. A	Salary	133
"	Provisional allowance	137
Gould Storage Battery Co	Contingencies	163
Goulet, R	Refunds	45
Government Telegraph Lines	Lessee	15
Gow, J. E	Duty-pay	140
"	Salary	128
Graham, A. L	"	127
Graham and Bros	Contingencies	149
Graham, J. G	Provisional allowance	137
Graham, W. J	Contingencies and salaries	125, 157
"	"	161
Graham, W. T	Duty-pay	140
"	Salary	127
Grand North Western Telegraph Co	Contingencies	148, 149
Grand Trunk Ry. Co	Freight	136, 154, 163
"	Lessee	118
Grant, H. H	Contingencies and salary	131
Grant's Spring Brewing Co., Ltd	Refunds	40
Gravel, A. I	Contingencies and salary	151
Graveline, D. P	Salary	129
Graves Bros	Contingencies	148, 154
Gray, R. S	Duty-pay	140
"	Provisional allowance	137
"	Salary	133
Gray, W. B	Provisional allowance	137
Great Northern Transit Co	Lessee	116
Grier, G. & Co	Lessees	116
Griffith, M. L	Salary	147
Grignon, A	Commission on sale of tobacco stamps	139
Grimason, Thomas	Salary	124
Grothé, L. A	Refunds	43, 46
Guay, A	Salary	151
Guay, A. E	"	130
Guelph, Excise Division	Contingencies and salaries	122-123
" Gas District	" "	156
Hagarty, B	Salary	147
Hagarty, P	"	131
Halifax Breweries, Ltd	Refunds	38, 39, 42
" Electric Light District	Contingencies	161
" Excise Division	" and salaries	131-132

		PAGE.
Halifax Gas District	Contingencies and salaries	158
" Weights and Measures Division	" "	152
Hall, F. J.	Provisional allowance	137
Hall, H. C.	Salary	151
Halliday, N. R.	Refunds	40
Halliday, W. A.	Salary	147
Hamilton Electric Light District	Contingencies	161
" Excise Division	" and salaries	123
" Gas District	" "	156
" Weights and Measures Division	" "	150
Hamilton, J.	Refunds	41
Hamilton, J. S. & Co.	"	36, 37
Hammond, T. W.	Provisional allowance	137
"	Salary	132
Hanlan, J. R.	"	122
Hanley, A.	"	124
Harbottle, N.	Provisional allowance	137
"	Salary	133
Harrison & Co.	Contingencies	136, 160
Harwood, J. O. A.	Salary	129
Hartinger, Frank	Refunds	38, 42
Hawkins, W. L.	Salary	132
Hayhurst, T. H.	Duty-pay	140
"	Salary	123
Hayward, W. J.	Contingencies and salary	152
Hébert, C. D.	" "	131
Hébert, J. A.	Salary	151
Heisz, L.	Refunds	41
Helliwell, H. N.	Salary	127
Henderson, Hugh	Refunds	39, 42
Henderson, W.	Distribution of seizures	142
"	Salary	126
Heney J. J.	Refunds	36
Henry James	"	45, 46, 47, 49, 50
Henwood, G.	Salary	134
Herald Publishing Co., Montreal	Subscription	148
Hesson, C. A.	Contingencies and salary	126
Hicks, W. H.	Salary	126
Higgerty, Chas.	Contingencies	148
Highland Spring Brewery, Ltd.	Refunds	38, 42
Higman, O.	Contingencies and salary	162
"	Salary	159
"	Travelling expenses	163
Higman, O., jr.	" "	162
Himsworth, W.	Petty expenses	149, 163
"	Salary	147
Hinchey, E. H.	"	124
Hiram Walker & Sons, Ltd.	Refunds	37, 41
Hirsch & Sons, J., Ltd.	"	43, 45
Hiscott, J. O.	Salary	123
Hoaglin, Mrs. Anna	Refunds	51, 136
Hobbs, G. N.	Salary	123
Hodder, W. E.	Provisional allowance	137
"	Salary	133
Hogan, James	Salaries	124, 144
"	Travelling and other expenses	145
Holden, Daniel	Purchaser	129
Howard, G. M.	Refunds	36
Howard & Co.	"	51
Howard, W. W. S.	Duty-pay	141
" "	Salary	127
Howden, R.	"	125
Howell, Thomas	"	133
Howie, A.	Duty-pay	140
"	Salary	122
Howson, G. H.	"	150
Hubbley, H. H.	"	131
Hudon, L. E.	"	129, 147
Huether, C. N.	Refunds	40
Huff, G. H.	Lessee	116
Huggett, A. P.	Salary	134
"	Provisional allowance	137
Hughes, H.	Salary	153
Hughes, P. A.	"	147
Hughes, R. A.	Salary	151
Hull Ferry (old lease)	Lessee	15
Hunter, W. M.	Salary	157

SESSIONAL PAPER No. 12

		Page.
Hurst, Levi B	Duty-pay	140
"	Salary	127
Hutcher, W	Refunds	41
Hydraulic and other rents	Appendix "A"	116 to 121
" "	Lessee's account	116 to 119
" "	Monthly deposits	24 to 31
" "	Revenue	14
Iler, B	Contingencies and salary	122
Imperial Brewing Co	Refunds	39
Inland Cigar Manufacturing Co	"	44
Inland Revenue Department	List of persons employed in	164 to 174
" " Expenditure, page 42	Details of	138–139
Inspector of bonded factories	Contingencies and salary	135
" breweries and malt houses	" "	135
" distilleries	" "	135
" tobacco factories	" "	135
Inspectors, Excise Districts	" "	135
Intelligencer, Belleville	Subscription	148
International Committee of W. & M.	Vote for	67
" "	Contribution to	155
Irion, A. L	Refunds	37, 41
Ironside, G. A	Contingencies and salary	125
Jackson, H. B	Commission	139
Jacobs, H. & Co	Refunds	46
James Simeon, Ltd	"	38, 42
James, T. C	Salary	131
Jameson, S. B	"	132, 133
Jamieson, R. C	Duty-pay	140
"	Salary	127
Jeffrey, A. J	"	126
Jefferys, E. J	Provisional allowance	137
"	Salary	132
Jennings, John	Law cost	144, 154
Johnson, H. J	Salary	126
Johnson, J. J	Duty-pay	141
"	Salary	125
Johnson, W	Contingencies and Salaries	150, 156
Johnston, C. W	" " "	156, 161
"	Salary	150
Johnstone, G	Provisional Allowance	137
Johnstone, J. K	Contingencies	161
"	" and salary	157
Joliette Excise Division	" " "	129
" " "	Distribution of seizures	142
Jones, A	Duty-pay	140
"	Salary	127
Jones, R	Contingencies	162
"	" and salaries	134, 159
Jones, Yarnell & Co., London, England	Subscription	149
Journal, The, Ottawa	"	148
Journal, The, St. Catharines	"	149
Jubenville, J. P	Salary	127
Kavanagh, A. J	Commission	138
Kearney, D. J	Salary	129
Keay, W. S	"	133
Keeler, G. S	Duty-pay	140
"	Salary	126
Keilty, Thomas	Contingencies and salary	126
Kellam & Farris	Law costs	136
Kelley, Geo	Refunds	44, 45
Kelley, J. T	Distribution of seizures	143
Kelly, D	Contingencies and salary	150
Kelwin & White, James	"	163
Kemp D. C	Refunds	37, 41
Kenning, J. H	Contingencies and salary	135
Kenny, J	Salary	133
Keogh, P. M	Duty-pay	140
"	Salary	127
Kerr, F. W	Distribution of seizures	142
Kerrigan, James	Refunds	38
Kidd, Thomas	Salary	144
"	Travelling and other expenses	145
Kilbourne, W. P	Refunds	45
King, R. M	Salary	131
King's Printer	Printing, &c	148
Kingsley, W. J	Contingencies	148

		PAGE.
Kingston Excise Division	Contingencies and salaries	124
Kingston Gas District	" and salary	156
Kirk, J. T.	Commission	138
Kirkpatrick, H. J.	Salary	123
Klansman, N.	Refunds	42
Klebanoff, S	"	44,45,46,50
Knipfel, J. E.	Provisional allowance	137
Knowles, Charles	Salary	151
Kylie, R.	"	150
Labatt, John	Refunds	40, 41
Labelle, L. V.	Contingencies and salary	128
Lacasse & Co	Refunds	49
Ladouceur, Louis	Salary	144
Laidman, R. H.	"	150
Lally, J. E.	Duty-pay	140
Lambert, J. A.	Salary	129
Lamoureux, J. A	"	120
Land sales	Details of	120-121
"	General account of	14
Landau & Cormack, Ltd	Refunds	43,45,46,47,48,49,50
Lane, T. M.	Salary	128
Lane & Cantin	Law costs	136
Langelier, F	Salary	130
Lapasse Ferry	Lesse	15
Lapasse and Gower Point Ferry	"	15
Laporte, G.	Salary	124
LaRivière, A. C.	Salaries	132, 145
"	Travelling and other expenses	145
LaRue, A.	Salary	130
LaSalle, B.	Bill stamps	18
Laurence, G. C.	Contingencies and salary	152
Laurier, J. L.	Salary	129
Laverdure, E. G.	Lessee	116
Law costs	Expenditure	136
Law stamps	Distributor's account	19
"	Monthly deposits	24 to 31
"	Revenue	53
Lawless, E. M.	Salary	147
Lawlor, H.	Contingencies and salary	135
Lawlor, J. J.	Salary	123
Lebel, J. A. W.	"	151
LeBlanc, F. X.	"	152
Leclerc, J.	Refunds	51
Ledoux, A.	Salary	129
Leduc, J. D.	Law costs	136
Lee, Edward	Salary	124
Lee, Thomas	Refunds	44
Lemesurier, John	"	44, 49
Lemoine, Alp.	Salary	144
Lemoine, J.	"	130
L'Espérance, J. A.	"	129
Lethbridge Brewing and Malting Co., Ltd., The	Refunds	38
LeVasseur, N.	Contingencies	161
"	" and salaries	158
Lévèque, J. T	Provisional allowance	137
Levy, Joseph	Refunds	43
Libbey, J. J	Provisional allowance	137
Licenses, Excise	Revenue from	22-23
Liddle, D.	Salary	151
List of persons employed by Inland Revenue Department		164 to 174
Listowel Gas District	Contingencies and salary	156
Lithgow, J. T.	Law stamps	19
Logan, J	Salary	123
London Electric Light District	Contingencies	161
" Excise Division	" and salaries	124
" "	Distribution of seizures	142
" Gas District	Contingencies and salaries	157
" Machine Tool Co., Ltd	"	154
Long, W. H. A.	Salary	132
Longtin, H.	"	129
Loux, Allan	Provisional allowance	137
Love, G. G.	Salary	128
Lownsborough, W.	Commission	138, 139
Lyman Sons & Co.	Contingencies	136, 146, 163
Lyone Bros.	Refunds	39, 40
Lyons, E.	Salary	124
Lyons, A.	"	151

		Page.
Macdonald, A. B.	Duty-pay	140
"	Salary	126
Macdonald, J. A.	Contingencies and salary	150
Macdonald, J. F.	" salaries	134, 154
"	Salary	162
Macdonald, Sir W. C.	Refunds	43, 44, 45, 46, 47, 48, 49, 50
Macfarlane, A. C.	Salary	144
Macfarlaue, J	"	150
Macfarlane, Thomas	"	144
MacGregor, D. C	Provisional allowance	137
"	Salary	133
MacGregor, Gourlay & Co.	Contingencies	154
MacIlrieth, R. T.	Law costs	136
MacKenzie, J. H.	Salary	126
Macpherson, M. J.	Commission	138
Magee, J. G.	Salary	159
Mager, J. G.	Provisioual allowance	154
"	Salaries	153
Magness, Robert	Contingeucies	162
"	" and salaries	153, 159
Mahoney, H.	Salary	127
Mahoney, J.	Cartage	136, 149
Mail Printing Co., The, Toronto	Subscription	148
Mainville, C. P.	Salary	129
Male, Thomas	Contingencies and salary	156
Malt—Comparative Statement for 1906-1907 and 1907-1908		84-85
" License fees		22-23
" Licenses issued, grain used, quantity produced		80-81
" Quantity taken for consumption		22-23
" Revenue		6, 8
" " Comparative Statement showing monthly increase or decrease for 1906-1907 and 1907-1908		34-35
" " Refunds		37 to 43
" " Warehouse returns		82-83
" " " Comparative Statement showing monthly increase or decrease for 1906-1907 and 1907-1908		84-85
Malt Liquor, Comparative Statement showing monthly increase or decrease for 1906-1907 and for 1907-1908		34-35
" " License fees		22-23
" " Licenses issued, materials used and quantity produced		86
" " Quantity taken for consumption		22-23
" " Revenue		6, 8
" " " Comparative Statement of malt liquor manufactured for the years 1906-1907 and 1907-1908		87
Manitoba Brewing and Malting Co., Ltd., The	Refunds	38, 42
Manitoba Excise District Inspector	Contingencies and salary	135
Manitoba Free Press, Winnipeg	Subscription	148
Mann, W.	Salary	158
Manness, S. R	Refunds	44
Manufactures in Bond.—Comparative Statement for 1906-1907 and for 1907-1908		108-109
" License fees		22-23
" Licenses issued, materials used and quantity produced		106-107
" Quantity taken for consumption		22-23
" Revenue		6, 8
" " Comparative Statement showing monthly increase or decrease for 1906-1907 and for 1907-1908		34-35
" " Refunds		51
" " Warehouse returns		110-111
" " " Comparative Statement showing increase or decrease		112-113
Maranda, N. A.	Salary	129
Marentette A.	"	150
Marin, L. H.	"	129
Marin, N. H.	"	129
Marion, H. R.	"	127
Marrion, A. H.	Provisional allowance	137
"	Salary	133
Marsh, R. J. F.	Commission	139
Marshall, I. N.	Salary	126
Marshall, R.	Contingencies and salary	153
Martel, Louis	Commission	138, 139
Martin, N.	Duty-pay	140
"	Salary	123
Martineau, O. J. E.	Duty-pay	141
" "	Salary	130
Mason, F.	Duty-pay	140
"	Salary	125

		PAGE.
Mathers, T. J.	Commission	139
Mauray, Jonathan	Lessee	116
Maurice, E.	Salary	125
Maveity, Mrs. S.	Contingencies	149
Melleville, T. R.	Salary	126
Merrill, M. W.	Lessee	116
Metcalfe, W. F.	Salary	126
Methylated Spirits.,	Monthly deposits.	24 to 31
"	Statement showing revenues and expenditures, pages 68-69, Vote for	67
"	" net receipts.	69
"	Quantity of raw material on hand at beginning and end of the year 1907-1908, material used and quantity produced	115
"	Quantity of methylated spirits on hand at beginning and end of year.	115
"	Quantity on hand at beginning and end of year, brought in, sold and otherwise accounted for, during the year 1907-1908	115
Metric System expenditure Details of, page 155.	Vote for	67
Meyer, F. A.	Provisional allowance	137
Mildrum, W. H.	Refunds	37
Miller, J. E.	Contingencies and salaries	133, 135, 159
"	Distribution of seizures.	143
Miller, W. F.	Contingencies and salary	123
Millier, E.	Duty-pay	141
"	Salary	129
Milligan G.	Refunds	44, 45
Milligan, R. J.	Salary	150
Milliken, E.	"	126
Milot, J. F.	"	129
Mines Publishing Co., Ltd., Tce, Toronto	Subscription	148
Minister of Inland Revenue.	Salary	67
Minor Expenditure, page 21.	Details of	144
" Revenues "	Vote for	67
" Public Works	Revenue	15
" Revenue	Monthly deposits	24 to 31
Mitchel, F. J. R.	Refunds	51
Mitchel, J. L.	Salary	123
Molson, John T.	Refunds.	37, 42
Montebello and Alfred Ferry	Lessee	15
Montgomery, W. H.	Salary	124
Montreal Electric Light Inspection District	Contingencies.	161
" Excise Division	" and salaries.	129
" "	Distribution of seizures	142
" Gas District	Contingencies and salaries	158
" Star Publishing Co., The	Subscription	148
" Weights and Measures Division	Contingencies and salaries	151
Moodie Liquor Co., Ltd., The	Refunds.	51
Moore, T	Salaries	132, 145
"	Travelling and other expenses.	145
Moose Jaw Brewing and Malting Co.	Refunds	39, 40
" Excise Division	Contingencies and salary	133
Morgan, E. J.	Provisional allowance	137
"	Salary	133
Morin, J. P.	Contingencies and salary	152
Morris, P. & Co., Ltd.	Refunds	45, 46, 47, 49, 50
Morris, T. H.	Provisional allowance	137
"	Salary	132
Morissette, F. R	"	131
Mueller, J.	Refunds	40
Mulhern, M. M.	Contingencies and salaries.	122, 156
Mulrooney, G.	Duty-pay	141
Munn & Co., New York	Subscription	148
Munro, H. D.	Salary	132, 158
Murdoch, Jas.	"	150
Murphy, F. C.	"	156
Murphy, M.	Purchaser	120
Murray, A. E	Salary	127
Murray, D.	Duty-pay	140
"	Salary	130
McAdam, Thomas	Purchaser.	120
McAloney, J. A.	Contingencies and salary	159
"	Provisional allowance.	137
"	Salaries.	134, 153
McAlpin, W. A.	Refunds	43, 45, 46, 47, 48, 50
McArthur, G. A.	Duty-pay.	140
"	Salary.	128
McAvity & Sons	Refunds	51
McCarthy, T. C.	"	37, 41
McCloskey, J. R.	Salary	131

		Page.
McCoy, W.	Refunds	122
McCraney, H. P.	Provisional allowance	137
"	Salary	133
McCuaig, A. F	"	122
McCullough, A.	"	147
McCutcheon, H. M	"	133
McDonald, A. J	"	132
McDonald, A. W	Provisional allowance	154
"	Salary	153
McDonald, J. F.	Commission	138
McDonald, R. D.	Refunds	45
McDonald, Rt. Revd. Bishop	Lessee	116
McFee, A. C	Salary	125
McGill, A	"	144
McGowan, G. A	Refunds	44
McGowan, J	Salary	131
McGowan, W. J	Commission	139
McGuire, L. J	Duty-pay	141
"	Salary	129, 130
McGuire, T.	"	124
McHarg, W. H.	Law costs	136, 163
McIntosh, W. A	Duty-pay	141
McIntyre, Rt. Rev. Bishop	Lessee	116
McKay, R	Provisional allowance	154
"	Salary	153
McKell, M. E.	"	162
McKenna, A	Refunds	45, 46, 47, 48, 50
McKenzie, Geo	Commission	138
McKenzie, W.	"	138
McLean, W. J.	"	139
McLenaghan, N.	Contingencies and salary	125
McLeod, Col. J. F	Bill stamps account	18
McMillan, J. A.	Contingencies	149
McNee, Archie	Lessee	118
McNee, J	Refunds	44
McNiven, J. D.	Provisional allowance	137
"	Salary	132
McPherson, E. A.	Duty-pay	140
"	Salary	126
McPherson, J	Commission	138, 139
McPhie, D	Contingencies	157, 161
"	" and salary	156
McPhie, W. H	Salary	156
McSween, James	Contingencies and salary	127
Nadeau, M.	Commission	138
Nanaimo Gas District	Contingencies and salary	159
Napanee "	" "	157
Nash, A. F.	" "	161
"	" "	157
Nash, S. C	" "	132
National Drug & Chemical Co.	"	163
Negretti & Zambra	"	136
Neil, James	Salary	128
Nelson Brewing Co., Ltd.	Refunds	39, 42
Nelson, Nels	"	38, 42
Nelson, Weights and Measures Divisoin	Contingencies and salary	153
New Brunswick Excise District	" "	135
New Ontario Brewing Co., Ltd	Refunds	39, 41
New York Brewing Co	"	39, 42
Newby, F	Salary	147
Newsome, I.	Distribution of seizures	142
"	Salary	122
New Westminster Gas District	Contingencies and salary	159
News Advertiser, Vancouver	Subscription	148
News Publishing Co., The Toronto	"	148
Niagara and Youngstown Ferry	Lessee	15
Nichol, D. A.	Provisional allowance	137
Nicholas, B. C	Salary	147
"	Travelling expenses	148
Nicholson, D	Refunds	43, 48, 50
Nolan, J. C.	Purchaser	126
Nolan, J. F	Refunds	44
Noonan, H. T.	Salary	125
Noonan, J. M.	"	124
Normandin, G	Distribution of seizures	142
"	Salary	128
North Bay Times, The	Subscription	148

		Page.
Northern Brewing Co.	Refunds	39
O'Brien, E. C.	Salary	122
Oddson, L.	Provisional allowance	137
O'Brien, E. C.	Salary	122
O'Brien, James	"	123
O'Brien, J. F.	Duty-pay	140
"	Salary	123
O'Donnell, J	"	124
O'Donnell, M. J	Distribution of seizures	142
"	Salary	129
O'Donoghue, M. J.	Distribution of seizures	142
"	Salary and contingencies	122
O'Dyer, P	Refunds	41
Oertling, L.	Contingencies	136
Officer's salary	Refunds	51
O'Flaherty, E. J.	Salary	129
O'Flaherty, M. J.	"	158
O'Keefe Brewing Co., Ltd., The	Refunds	37, 41
O'Leary, T. J	Duty-pay	140
"	Salary	127
Olivier, H.	Duty-pay	140
"	Salary	128
Ontario District Inspection	Contingencies and salaries	135
Oriental Tobacco Co.	Refunds	45, 46, 47, 49, 50
Orr, H. N.	Salaries	122, 157
Ostiguy, L. R.	Salary	147
O'Sullivan, D.	Salaries	134, 145
"	Travelling and other expenses	145
Other receipts—Revenue—Comparative statement showing monthly increase or decrease for 1906-1907 and 1907-1908		34-35
Other receipts Revenue from		7, 9
" " monthly deposits		24 to 31
Ottawa Electric Co.	Lessee	116
" " Light District	Contingencies	161
" " Railway Co.	Lessee	116
" " "	Fare tickets	149
" Excise Division	Contingencies and salaries	148
" *Free Press*	Subscription	157
" Gas District	Contingencies and salaries	157
" Hardware Co	" "	163
" Investment Co. Ltd	Lessee	116
" Weights and Measures Division	Contingencies and salaries	150
Otterbein, C.	Refunds	40
Ouellette Street Ferry, Detroit	Lessee	15
Owen Sound Electric Light District	Contingencies	161
" Excise Division	" and salaries	125
" Gas District	" "	157
Packard Electric Co., The	"	163
Panneton, G. E.	Salary	129
Pape, James	"	157
Pardee, Dr. E	Contingencies	136
Parent, A	Duty-pay	141
Parent, P.	Salary	152
Park, W. A.	Commission	138
Parke Davis & Co.	Refunds	36, 37
Parker, Thomas.	Salary	153
Parkin, M. R.	Provisional allowance	137
"	Salary	132
Parkinson, E. B.	Distribution of seizures	143
"	Salaries	133, 145
"	Travelling and other expenses	145
Parson, C. H.	Provisional allowance	137
"	Salary	133
Part of building, Portland, N.B.	Lessee	15
Patry, J. H.	Salary	130
Patterson, C. E. A.	"	129
Payne, J. B	Refunds	46
Peel, A.	Lessee	116
Pedwell, W.	"	116
Pelletier, N. G.	Salary	121
Pembroke and Allumette Island Ferry (old lease)	Lessee	15
" " (new lease)	"	15
Pembroke Observer, The	Advertising	144
Perley & Pattee	"	116
Persons employed by Inland Revenue Department, List of		164 to 174
Perth Excise Division	Contingencies and salaries	125
Peterborough Excise Division	" "	125

		Page.
Peterbortugh Gas District	Contingencies and salaries	157
Petit, J. B	Salary	151
Petrie, Mrs. M	Lessees	116
Petrimoulx, D	Duty-pay	141
Petroleum Inspection Fees		22-23
" " Comparative statement for 1906-1907 and 1907-1908		105
" Return of Canadian petroleum and naphtha inspected during 1907-1908		104
Phoenix Brewing Co	Refunds	38, 42
Pictou Excise Division	Contingencies and salaries	132
" Weights and Measures Division	" "	153
Pleasance, W	Salary	124
Poirier, J. N	"	130
Poitras, W	Duty-pay	141
"	Salary	130
Pole, C. W	"	122
Pound, J. T	Commission	138, 139
Poneiac Advance, The	Advertising	144
Port Arthur Excise Division	Contingencies and salaries	125
Portelance, P. A	Salary	130
Porter, N	Commission	138, 139
Postmaster, Ottawa	Postage	148
Post Office Department	Bill stamp account	18
Potvin, Mrs. Amanda	Contingencies	146
Poulin, L. N	"	149
Powell, Alex	Purchaser	110
Powell, J. B	Contingencies and salary	122
Power, J. F	Provisional allowance	137
"	Salaries	130, 145
"	Travelling and other expenses	145
Préfontaine F. H.	Salary	151
Prescott and Ogdensburg Ferry	Lessee	15
Prescott Excise Division	Contingencies and salaries	126
Preventive Service	General statement of expenditures and salaries	16
"	Vote for	67
Pritchard, Andrews Co., The	Contingencies	136, 146, 154, 160, 163
Progrés Le, Windsor	Subscription	149
Proteau & Carignan	Refunds	39
Province Cigars Co	"	43
Provisional allowances	Distribution of	137, 154
Provost, I. E	Contingencies and salary	161
Publow, W. J	Salary	125
Pynes, Joseph	Refunds	46
Quain, Redmond	Salary	147
Quebec Electric Light Inspection District	Contingencies	161
" Excise District	" and salary	135
" " Division	" and salaries	130
" " "	Distribution of seizures	142
" Gas District	Contingencies and salaries	158
" Harbour Commissioners	Lessees	116
" Weights and Measures Division	Contingencies and salaries	151-152
Quinn, J. D	Duty-pay	141
"	Salary	130
Quyon Ferry	Lessee	15
Rainy River Ferry	"	15
Ralston, T	Duty-pay	140
Rankin John	Lessee	116
Ratchford, C. E	Commission	138
Rau, Mary	Refunds	41
Ray, Geo. R	Commission	139
Raw leaf tobacco taken for consumption		22-23
Ready, James	Refunds	38, 42
Refunds of revenue		36 to 51
Reid, Robert (estate of)	Purchaser	120
Reinhardt, C. S	Refunds	37, 42
Reinhardt, L	"	37, 41
Renahan, M. J	Salary	157
Renaud, A. H	"	129
Rennie, G	Contingencies and salaries	126, 157
Revenue	Recapitulation for every service for the year	32, 33
" Casual		29
" Electric Light Inspection		32, 33
" Excise		5 to 9
" Gas Inspection		60-61
" General account		3
" Hydraulic and other rents		14

PAGE.

Revenue, Law stamps 53
" Methylated spirits 68-69
" Minor public works 15
" Monthly deposits ..... 24 to 31
" Sundry minor revenue 20
" Weights and Measures 54-55
Richelieu and Ontario Navigation Co. ..... Lessee 116
Rickey, J ..... Salary 144
" ..... Travelling expenses and purchases 145
Ridgman, A. H ..... Salary 134
Riley, D. A ..... Refunds 43
Rinfret, Dr. C. I ..... Contingencies and salary 135
Ritchie, A. J ..... " 161
" ..... " and salary 158
Ritchie, H ..... Salary 127
Ritchie, W ..... Lessee 116
Robert, A ..... Salary 148
Robert, Mrs. R ..... Contingencies 149
Roberts, P. T ..... Refunds 51
Robins, S. W ..... Salary 150
Robinson, D. & Rowland, J ..... Lessees 118
Robinson, Isaac A ..... Refunds 38, 42
Robitaille, G. W ..... Contingencies and salary 161
Robitaille, Lorenzo ..... Refunds 38, 43
Roche, H. G ..... Contingencies 161
" ..... " and salary 157
Rochester, John ..... Lessee 116
Rock City Tobacco Co., Ltd. The ..... Refunds 43, 45, 46, 48, 49
Rocot, Casimir ..... " 37, 41
Rork, T. ..... Contingencies 157
" ..... Salary 125
Rockcliffe & Gatineau Ferry ..... Lessee 15
Rose, J. A ..... Salary 124
Ross, A. D ..... Commission 139
Ross, H. E ..... Provisional allowance 137
" ..... Salary 132, 133
Ross, W. T ..... Commission 138
Rossland Miner, Rossland ..... Subscription 148
Rouleau, C. E ..... Salary 130
Rouleau, J. C ..... Salaries 130, 145
" ..... Travelling and other expenses 145
Rousseau, E. H ..... Salary 131
Rowan, W. E ..... " 125
Roy, C. E ..... Contingencies and salary 151
Roy, J. A ..... Refunds 40
Roy, L. G ..... Salary 147
Rudkins, W ..... Contingencies and salaries 125
Russ, D ..... Provisional allowance 137
Ryall, Chas. A ..... Refunds 51
Ryan, William ..... Salary 129
Sanderson, A. E ..... " 144
" ..... Travelling expenses, &c 145
Sandwich and Detroit Ferry ..... Lessee 15
Sarnia Gas District ..... Contingencies 157
Saturday Night The, Toronto ..... Subscription 148
Saucier, X ..... Contingencies and salary 133
Sault Ste. Marie Ferry ..... Lessee 15
Scanlan L. J ..... Salary 134
Schnoter, F. H ..... Refunds 43
Schofield, J. H ..... Provisional allowance 137
School Trustees, Rondeau Harbour ..... Lessee 116
Schrader, J. H ..... Refunds 43
Schram, R. L. H ..... Salary 126
Schuler, F. C ..... " 122
Schwan, David ..... Refunds 40
Schwan, W ..... " 41
Scullion, W. J ..... Duty-pay 141
" ..... Salary 128
Seagram, J. E ..... Refunds 41
Seizures—Distribution of 142-143
" Excise—Comparative statement showing monthly increase or decrease for 1906 1907 and 1907-1908 34-35
" " Recapitulation of 143
" " Revenue 6, 8
" " " monthly deposits ..... 24 to 31
Sentinel Review, The, Woodstock ..... Subscription 148
Shanacy, M ..... Contingencies and salary 156

		PAGE.
Shanacy, M.	Salary	127
Shareholder, The, Montreal	Subscription	148
Shaw, F. D	Salary	133
Shaw, H. V	Refunds	43
Shaw, J	Provisonal allowance	137
"	Salaries	134, 153, 159
Shaw, J. F	Salary	147
Shea, Patrick	Refunds	38, 42
Shedrick Rigby Co., Ltd	Contingencies	163
Sherbrooke Electric Light District	"	161
" Excise Division	" and salaries	130, 131
" Gas District	" "	158
" *Record Co.*	Subscription	148
Silver Spring Brewery, Ltd.,	Refunds	38, 42
Simon, H	"	49
Simon, Leiser Co., Ltd	"	43
Simpson, A. F	Contingencies	161
"	" and salaries	130, 158
Simpson, W. A	Salary	126
Skead, Honble. James	Lessee	116
Skelton, A. R	Salary	157
Slattery, R	"	124
Slattery, Thomas	"	150
Sleeman, G. A	Refunds	41
Sleeman, B. & M. Co., Ltd., The	"	39, 40
Sloan, Wm	Distribution of seizures	142
"	Salary	122
Smith, B. H	"	125
Smith, J	Refunds	45
Smith, J. C	Salary	151
Snowden, J. W	Duty-pay	140
"	Salary	129
Snuff, quantity taken for consumption		22–23
Soleil Le, Quebec	Subscription	149
Solomon, E	Refunds	43, 44, 45, 46, 47, 49, 50
Sparling, J. W	Provisional allowance	137
"	Salary	132
Spectateur, Le, Hull	Subscription	149
Spence, F. H	"	122
Spereman, J. J	"	124
Spicer, H	Provisional allowance	154
"	Salary	153
Spiers, Jacob Duke	Lessee	118
Spilling Bros., Ltd	Refunds	43, 44, 46
Spirits—Distilleries, transactions		74–75
" License fees		22–23
" Licenses issued, materials used and quantities produced		72
" " " " comparative statement for 1906-1907 and for 1907-1908		73
" Quantity taken for consumption		22–23
" Return of manufactures		72
" " " Comparative statement for 1906-1907 and 1907-1908		73
" Warehouse returns		76–77
" " " Comparative statement for 1906-1907 and 1907-1908		78–79
" Revenue		6, 8
" " Comparative statement showing monthly increase or decrease for 1906-1907 and 1907-1908		34–35
" " Refunds		36–37
Sprague, F. W	Salary	122
Spratt, Joseph	Lessee	116
Sproule, W. H	Contingencies	149
Stamps—Bill—Distributors' account		18
" Electric Light Distributors' account		64–65
" " Revenue		53
" Gas Distributors' account		18
" " Revenue		53
" Law Distributors' account		19
" Revenue		53
" Weights and Measures Distributors' account		54–55
" " " Revenue		53
Standish, J. G	Duty-pay	140
"	Salary	122
Stanley, F. C	"	124
Stanley, T. D	Commission	139
Statistics	Appendix A	71 to 121
Stevens, G. H	Contingencies	163
Stevenson, J. R	Commission	139

PAGE.

Stevenson, R. ..... Refunds 141
Storr, A. M. ..... Contingencies 149
Stratford Excise Division ..... Contingencies and salaries 126
" Gas District ..... " " 157
Strathcona Brewing and Malting Co., Ltd ..... Refunds 39
Stratton, W. C. ..... Contingencies and salary 135
Street, A. F. ..... Commission 138
Stuart, W. E. ..... Salary 156
Sullivan, Timothy ..... Purchaser 120
Sundry Minor Revenue ..... General statement of 120
Swannell, F. W ..... Salary 133
Sykes, W. J. ..... Duty-pay 141
St. Catharines Excise Division ..... Contingencies and salaries 126
St. Hyacinthe Electric Light District ..... " salary 161
" Excise Division ..... " " 130
" Gas District ..... Salary 158
" Weights and Measures Division ..... Contingencies and salaries 152
St. John (N.B.) Electric Light Inspection District ..... " 161
" Excise Division ..... " and salaries 131
" " ..... Distribution of seizures 143
" Gas District ..... Contingencies and salaries 158
" Weights and Measures Division ..... " " 152
St. Leonard and Van Buren Ferry ..... Lessee 15
St. Michel, F. X. ..... Salary 129
St. Onge, U ..... " 138, 139
Talbot, J. ..... " 124, 144
" ..... Travelling expenses and purchases 145
Taylor, G. W ..... Duty-pay 140
" ..... Salary 130
Teevens, L. P. ..... " 148
Telegraph messengers, G. N. W ..... Gratuities 149
" " C. P. R ..... " 149
Telegram, The, Winnipeg ..... Subscription 148
Tellier, J. A ..... Refunds 38, 42
Templeman, Honble. W ..... Salary 147
Templeton, W. A ..... Provisional allowance 137
Temps, Le, Ottawa ..... Subscription 148
Tétreau, Nérée ..... Lessee 116
Tétreault, J ..... Salary 130
The Bronson Co. ..... Lessee 116
The Chemist and Surgeons' Supply Co ..... Contingencies 146
The Eastern Township Bank, for G. M. Howard ..... Refunds 36
Thérien, J. F ..... Salary 152
Thomas, F. W ..... Salary 123
Thomas, J. S. ..... " 151
Thomas, R. ..... Duty-pay 140
" ..... Salary 127
Thomas, W. F. ..... Duty-pay 140
" ..... Salary 123
Thompson, Abraham ..... Purchaser 120
Thompson, A. T. & Co. ..... Contingencies 146
Thompson, J. C. ..... Salary 153
Thorburn, Jas ..... Distribution of seizures 143
" ..... Provisional allowance 137
" ..... Salary 133
Thornton & Truman ..... Contingencies 136, 148, 163
Thrasher, W. A ..... Salary 124
Three Rivers Electric Light District ..... Contingencies and salary 161
" Excise Division ..... " salaries 131
" Weights and Measures Division ..... " " 152
Thurber, Geo ..... Salary 129
Tietjen, W ..... Refunds 43
Till, T. M ..... Salary 122
Times Printing Co., Hamilton ..... Subscription 148
Timmons, R ..... Salary 130
Tobacco, Canadian Twist ..... Commission on sale of stamps 139
" " Comparative statement for 1906-1907 and 1907-1908 97
" " Quantity taken for consumption 22-23
" " Statement of the revenue collected for the year 1907-1908 96
Tobacco Factories ..... Inspector of 135
" License fees 22-23
" " comparative statement for 1906-1907 and 1907-1908 89
" " issued, material used and quantity produced 88
" Quantity taken for consumption 22 23
" Raw leaf 22-23
" " scrap and cuttings, duty collected on actual weights 92-93
" " warehouse returns 92-93

		PAGE.
Tobacco Raw Leaf, warehouse retrtuns, comparative statement for 1906-1907 and 1907-1908		94–95
" Revenue		6, 8
" " Comparative monthly statement showing increase or decrease for 1906-1907 and 1907-1908		34–35
" " refunds		43 to 50
" " warehouse returns		90
" " " comparative statement for 1906-1907 and 1907-1908		91
" Snuff—Quantity taken for consumption		22–23
" Stamps	Commission	139
" "	" vote for	67
" *World Publishing Co., The Philadelphia.*	Subscription	148
Tobin, John & Co.	Refunds	43, 45, 46, 47 48, 49, 50
Tobin, T. S.	Salary	126
Tomlinson, W. M.	"	152
Tompkins, P.	"	131
Toronto Brewing & Malting Co	Refunds	37, 41
Toronto Excise Division	Contingencies and salaries	126, 127
" "	Distribution of seizures	142
" Gas District	Contingencies and salaries	157
" Weights and Measures Division	" "	150, 151
" *World, The*	Subscription	148
Toupin, J. A.	Contingencies and salaries	128
"	Distribution of seizures	142
Tracy, J. P.	Salary	124
Trade Review, The, Montreal	Subscription	149
Traversy, F. X.	Duty-pay	140
Tribune, La, St. Hyacinthe	Subscription	149
Tribune Publishing Co., The, Winnipeg	"	148
Trudell, E.	Distribution of seizures	142
Trumbull Electric Mfg. Co., The	Contingencies	163
Trumpour, G.	Salary	147
Tuckett Cigar Co., Ltd., The	Refunds	44, 45, 46, 49, 51
Tyson, A. M.	Commission	139
Tyther, J. M.	Salary	124
Union Brewing Co.	Refunds	43
Union Brewing Co., Ltd., The	"	39, 41
Union de S'Hyacinthe, L'	Subscription	148
United Canada	"	148
Valade, F. X.	Food analyses	146
Valin, J. A. G.	Salary	144
Valin, J. E.	"	147
Valleau, A. S.	Commission	138
Vancouver Breweries, Ltd., The	Refunds	38, 39, 40
" Excise Division	Contingencies and salaries	133, 134
" "	Distribution of seizures	143
" Gas District	Contingencies and salary	159
" Provisional allowance	Distribution of	137
" Weights and Measures Division	Contingencies and salaries	153
Veniot P. J.	Commission	138
Verner, F.	Salary	128
Verner, T. H.	"	132
Victoria Electric Light District	Contingencies	162
" Excise Division	" and salaries	134
" Gas District	" "	159
" Phœnix Brewery Co., Ltd	Refunds	39, 42
" Provisional allowance	Distribution of	137
Vinegar	License fees	22–23
"	Duty accrued	22–23
" Revenue, comparative statement of manufactures for the years 1906-1907 and 1907-1908		106-107
" Statement showing number of gallons manufactured in 1907-1908		108-109
Waddell, S. J	Salary	132
Walker, J. H.	Provisional allowance	137
"	Salary	133
Walkerville Brewing Co., Ltd.	Refunds	39
Walsh, A	"	44, 45, 46, 47. 48, 49, 50
Walsh, D. J.	Duty-pay	140
"	Salary	128
Walsh, W. H.	"	127
Walton, E. J. R.	Commission	138, 139
Ward, W.	Refunds	43, 49
Wardell, R. S. R.	Salary	127
Watson, Geo.	Commission	138, 139
Watson, John	Refunds	41
Watson, V. M.	Salary	147
Watt, Geo.	Commission	138
Waugh, Richard J.	Salaries	145–152
"	Travelling and other expenses	145

		Page.
Webbe, C. E. A	Salary	124
Weights and Measures	Contingencies, page 154. Vote for	67
" "	Deputy Inspector's account (Old divisions)	56
" "	Expenditures (Old divisions)	59
" "	" pages 47-48—Details of	150 to 154
" "	Inspection Divisions in account with expenditure	57-58
" "	Inspection Divisions in account with revenue	54 to 55
" "	Monthly deposits	24 to 31
" "	Salaries, vote for	67
" "	Special vote for	67
" "	Stamps revenue	53
" "	Refunds	51
Westbrooke & Hacker	"	40
Westman, Thomas	Salary	147
Weston Electrical Instrument Co.	Contingencies	163
Weyburn Machine, Electrical Co.	Refunds	51
Wheatley, A. E.	Salary	150
White, H.	Commission	139
White, H. E.	Salary	152
White, J. A.	"	157
Whitehead, Mrs. J.	Contingencies	136
Whitehead, J. P.	Salary	124
Whyte, J. B.	"	126
Wiarton Docks	Lessee	15
Wickwire, W. N.	Refunds	38, 39, 42
Williams, J. E.	"	44
Williams, S.	Lessee	116
Wilson, Andrew	Refunds	43 to 45
Wilson, D.	Salary	124
Wilson, H. R.	Duty-pay	140
"	Salary	122
Wilson, J. C.	"	151
Wilson, J. E.	Contingencies	161
"	" and salaries	158
Wilson, Little, Badgerow & Co., The	Refunds	39, 40
Windsor Excise Division	Contingencies and salaries	127-128
" Weights and Measures Division	" "	151
Winnipeg Electric District	Contingencies	162
" Excise Division	" and salaries	132
" Gas District	" and salary	159
" Provisional allowance	Distribution of	137-154
" Weights and Measures Divisions	Contingencies and salaries	151
Winsor, J. A.	Salary	124
" J.	"	150
Wintzell's, Ltd	Refunds	47 to 49
Wiser, J. P. & Sons, Ltd	"	41
Witness Printing House	Subscription	149
Wolfenden, W.	Distribution of seizures	143
"	Provisional allowance	137
"	Salaries	133-159
Wood, H. M.	Salary	125
" J. A.	"	126
Woodstock Gas District	Contingencies and salary	157
Woodward, G. W.	Duty-pay	146
" "	Salary	126
World, The	Subscription	149
Wright, A. J.	Refunds	37 to 41
Wright, R. J.	Salary	150
Wright, S. E.	"	144
Yetts, Robert P.	"	147
Young, Levi	Lessee	116
Young, R. E.	Duty-pay	
"	Salary	
Yukon Electric Light District	Salary	162
" Excise Division	"	134
" Weights and Measures Division	Contingencies and salary	154

REPORTS, RETURNS AND STATISTICS

OF THE

INLAND REVENUES

OF THE

DOMINION OF CANADA

FOR THE YEAR ENDED MARCH 31

1908

PART II

INSPECTION OF WEIGHTS AND MEASURES GAS AND ELECTRIC LIGHT

PRINTED BY ORDER OF PARLIAMENT

OTTAWA
PRINTED BY S. E. DAWSON, PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1908

[No. 13—1908.]

REPORT

OF THE

DEPUTY MINISTER OF INLAND REVENUE

ON THE

INSPECTION OF WEIGHTS AND MEASURES, GAS AND ELECTRIC LIGHT

To the Honourable
The Minister of Inland Revenue.

SIR,—I have the honour to submit herewith my annual report on the inspection of weights and measures, gas and electric light, with the usual statements in connection therewith, for the Fiscal Year ended March 31, 1908.

1. The total revenue collected during the year for the inspection of weights and measures, was $83,021.32, as against $54,927.26 collected during the nine months ended March 31, 1907.

2. The total expenditure was $101,492.24 as against $69,466.15 expended during the nine months ended March 31, 1907.

3. Appendix 'A' gives a summary statement of the receipts and expenditures of each inspection division.

4. In Appendices 'B,' 'C' and 'D' will be found a detailed statement of weights, measures and weighing machines presented for verification, verified and rejected during the year. The number of all descriptions may be summarily stated as follows:

—	Presented.	Verified.	Rejected.	Percentage of Rejections.
Weights, Dominion	71,020	70,728	292	0·41
Measures of capacity, Dominion	117,217	117,180	37	0·03
Lineal measures	8,260	8,146	114	1·38
Balances, equal arms	14,980	14,798	182	1·21
" steelyards	5,723	5,632	91	1·59
" platform scales	42,315	41,355	960	2·27
Miscellaneous weights	442	428	14	3·17
" measures of capacity	11,411	11,386	25	0·22
" balances	21,191	21,126	65	0·31

Inspection of Gas.

5. The total revenue collected during the nine months ended March 31, 1907, for the inspection of gas and gas meters, was $31,917.00, as compared with $44,032.50, collected during the year ended March 31, 1908.

6. The total expenses were $22,842.14 as against $31,014.35 expended during the year ended March 31, 1908.

7. Appendix 'E' gives a summary statement of the receipts and expenditures of each gas inspection district.

8. A statement of the illuminating power and purity of gas inspected during the year will be found in Appendix 'F.'

9. The illuminating power, where inspection has been made, has been as follows:—

Places.	Number of tests made.	Number of times below Standard.	Places.	Number of tests made.	Number of times below Standard.
Barrie	12	1	St. Catherines	12	
Belleville	25	3	St. Thomas	12	
Berlin	12		Toronto	102	
Brockville	24		Windsor	15	2
Cobourg	12		Woodstock	12	
Cornwall	12		Montreal	105	
Deseronto	12		Quebec	12	
Guelph	12		Sherbrooke	12	
Hamilton	26		St. Hyacinthe	12	
Ingersoll	15	4	Fredericton	12	
Kingston	24		Moncton	13	
Listowel	12		St. John, N.B.	32	
London	106	2	Halifax	13	
Napanee	12		Yarmouth	13	
Ottawa	105		Charlottetown	15	
Owen Sound	12		Winnipeg	102	
Peterborough	24	1	Nanaimo	5	
Port Hope	12		New Westminster	11	
Sarnia	12		Vancouver	12	
Stratford	11		Victoria	2	

The revenue derived from the inspection of electric light was as follows :—

Fees for inspection of meters, &c		$36,600 20
Registration of companies		5,616 25
		$ 42,216 45
The expenses of inspection (annual)	$ 12,345 55	
" *re* export of electric power	456 80	
		$ 12 802 35
		$ 29,414 10
Expended on standard instruments, &c		5,015 05
Leaving a net revenue of		$ 24,399 05

Since the year 1896–97 the two services of gas and electric light inspection, which are conducted largely by the same staff of officers have reached that point at which they have ceased to be a burden upon the general taxpayer, as shown below :—

Years.	Gas and Electric Light.	
	Revenue.	Expenditure.
	$ cts.	$ cts.
*1899–1900	35,523 50	26,424 48
*1900–01	37,536 57	28,247 20
1901–02	45,663 05	33,328 48
1902–03	49,054 55	36,006 47
1903–04	50,218 75	33,426 15
1904–05	62,561 37	34,774 02
1905–06	76,539 00	38,917 48
1906–07 (nine months)	57,868 18	30,793 84
1907–08	86,552 20	48,831 75

* Exclusive of cost of standard instruments.

The kindred service of weights and measures inspection, it will be observed, earns slightly over 81 per cent of its actual cost, the expenditure as already stated having been $101,492.24 against a revenue of $83,021.32.

The International Commission on Electrical Units and Standards which was to have met in London, England, in the month of October last, will hold its sittings in September of this year.

The International Congress of Applied Electricity meets in Marseilles during the same month.

Mr. Ormond Higman, Chief Electrical Engineer, has been appointed Canadian representative to attend both meetings.

Up to the present time over 700 sample sets of metric weights and measures have been sent out from the Department for use in educational institutions throughout the Dominion.

I have the honour to be, sir,

Your obedient servant,

W. J. GERALD,
Deputy Minister.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

APPENDIX A.

STATEMENT of Weights and Measures Expenditures and Revenues for the Fiscal Year ended March 31, 1908.

Inspection Divisions.	Inspectors and Assistants.	Expenditures.						Revenues.
		Salaries.	Special Assistance.	Rent.	Travelling Expenses.	Sundries.	Total.	
		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Belleville	Johnson, Wm Slattery, Thos. Johnston, C. W Gallagher, F. Kylie, Richard Howson, G. H.	3,382 75	967 25	419 25	2,195 50	607 86	7,572 61	6,286 55
Hamilton	Freed, A. T. Laidman, R. H Marentette, A. Fitzgerald, E. W. Wheatley, A. E. Robins, S Clegg, Joseph	5,962 19	.....	.....	1,678 34	106 68	7,747 21	10,780 41
Ottawa	Macdonald, J. A. McFarlane, J Winsor, J Breen, John Findlay, Robt. Hodgins, H. A	4,224 88	150 00	.....	1,152 39	141 44	5,668 71	3,979 65
Toronto	Kelly, D Milligan, R. J. Wright, R. J. Murdoch, J. Smith, J. C. Cruikshank, J. L Lyons, A	5,131 75	483 36	.....	1,946 76	177 30	7,739 17	10,690 38
Windsor	Hayward, W. J. Hughes, R. A. Thomas, J. S. Coughlin, D Liddle, David.	4,724 74	287 09	.....	1,898 06	291 88	7,201 77	10,049 50
	Ontario	23,426 31	1,887 70	419 25	8,871 05	1,325 16	35,929 47	41,786 49

APPENDIX A—*Continued.*

STATEMENT of Weights and Measures Expenditures and Revenues for the Fiscal Year ended March 31, 1908—*Continued.*

Inspection Divisions.	Inspectors and Assistants.	Expenditures. Salaries.	Special Assistance.	Rent.	Travelling Expenses.	Sundries.	Total.	Revenues.
		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Montreal.	Chalus, J. O.							
	Daoust, J. A							
	Hébert, J. A. P.							
	Boudet, E							
	Collins, D							
	Beaulac, J. H	6,483 00	763 33	876 75	2,203 58	227 92	10,554 58	15,606 45
	Hall, H. C							
	Galipeau, J. B. N....							
	Wilson, J. C...							
	Macbeth, W							
Quebec.	Roy, Chs. E.							
	Guay, Alphonse							
	Petit, J. B							
	LeBel, J. A. W.....							
	Knowles, Chs.....							
	Bourget, L. J.....	6,797 62	599 94	300 00	1,835 17	391 81	9,924 54	4,674 30
	Parent. Paul.....							
	Bujeaud, J. F							
	Caldwell, A. B.. ...							
	Préfontaine, F. H....							
St. Hyacinthe.	Morin, J. P							
	Tomlinson, W. M....	2,781 52	.....	..	1,126 50	131 39	4,039 41	2,737 90
	Dessert, V.....							
	Thérien, J. F.....							
Three Rivers..	Gravel, A. I	1,599 96	.. ..	.....	960 33	40 91	2,601 20	1,715 85
	Bolduc, E.							
	Quebec.	17,662 10	1,363 27	1,176 75	6,125 58	792 03	27,119 73	24,734 50
St. John, N.B.	Barry, Jas.....							
	Leblanc, F. X.	2,966 63	.....	.....	298 85	111 10	3,376 58	2,035 88
	Bernier, J. A.....							
	White, H. E..							
Cape Breton..	Lawrence, G. C.....	849 96	.....	50 00	477 25	23 22	1,400 43	802 72
Halifax.	Frame, A							
	Waugh, R. J.....	1,749 84	799 92	400 00	422 44	165 71	3,537 91	1,178 61
	Sargent, F. H.							
Pictou.....	Dustan, W. M.....	1,699 96	.....	.....	264 33	98 75	2,063 04	989 89
	Chisholm, J. J.....							
	Nova Scotia.	4,299 76	799 92	450 00	1,164 02	287 68	7,001 38	2,971 22
Charlotte-town, P.E.I.	Davy, E.							
	Hughes, Henry....	1,658 22	.....	.....	240 48	79 12	1,977 82	579 18
Winnipeg, Man	Magness, R....							
	McKay, R.....							
	Mager, Jos G..							
	Gilby, W. F....	3,318 60	967 25	.....	1,607 94	132 89	6,026 68	6,986 95
	Spicer, Henry.....							
	Thompson, J. C.....							

SESSIONAL PAPER No. 13

APPENDIX A—*Concluded.*

STATEMENT of Weights and Measures Expenditures and Revenues for the Fiscal Year ended March 31, 1908—*Concluded.*

Inspection Divisions	Inspectors and Assistants.	Expenditures. Salaries.	Special Assistance.	Rent.	Travelling Expenses.	Sundries.	Total.	Revenues.
		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Calgary, Alta.	Costello, J. W. ... / McDonald, A. W....	1,750 00	.....	18 00	993 95	41 76	2,803 71	2,297 50
Nelson	Parker, Thos.....	974 97	... ...	....	674 90	54 90	1,704 77	641 30
Vancouver....	Marshall, R..... / Findlay, H ..... / McAloney, J. A..... / Shaw, John..... ...	2,201 76	.....	485 00	91 25	234 45	3,012 46	901 30
	British Columbia ...	3,176 73	.....	485 00	766 15	289 35	4,717 23	1,542 60
Dawson, Y. T.	Macdonald, J. F	1,000 00	... .	....	.....	22 75	1,022 75	87 00

RECAPITULATION.

—	Expenditures. Salaries.	Special Assistance.	Rent.	Travelling Expenses.	Sundries.	Total.	Revenues.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Ontario.....	23,426 31	1,887 70	419 25	8,871 05	1,325 16	35,929 47	41,786 49
Quebec	17,662 10	1,363 27	1,176 75	6,125 58	792 03	27,119 73	24,734 50
New Brunswick	2,966 63	.....	.. ....	298 85	111 10	3,376 58	2,035 88
Nova Scotia.....	4,239 76	799 92	450 00	1,164 02	287 68	7,001 38	2,971 22
Prince Edward Island.....	1,658 22	.....	.....	240 48	79 12	1,977 82	579 18
Manitoba.....	3,318 60	967 25	.....	1,607 94	132 89	6,026 68	6,986 95
Alberta	1,750 00	... .	18 00	993 95	41 76	2,803 71	2,297 50
British Columbia	3,176 73	.....	485 00	766 15	289 35	4,717 23	1,542 60
Yukon	1,000 00	... .	.. ..	....	22 75	1,022 75	87 00
Chief Inspector..	2,600 00	....	.....	314 17	5 19	2,919 36	....
General Contingencies	.. ....	.....	....	.... .	3,325 05	3,325 05	.. ....
Metric System.....	... .	.....	.....	... ...	98 67	98 67	....
Printing.....	.. ....	.....	. . ..	... .	1,701 98	1,701 98	... .
Stationery	... .	.....	.....	... .	751 01	751 01	... .
Lithographing.....	....	.....	.....	... .	37 10	37 10	. ....
Provisional Allowance	....	....	....	. . ..	449 86	449 86	.. ....
International Committee of Weights and Measures.	....	.. ..	... .	... ..	2,233 86	2,233 86	....
Grand totals.....	61,858 35	5,018 14	2,549 00	20,382 19	11,684 56	101,492 24	83,021 32

INLAND REVENUE DEPARTMENT,
OTTAWA, JUNE 11, 1908.

W. J. GERALD,
Deputy Minister.

APPENDIX

RETURN of Weights and Measures Inspected during the Fiscal Year ended March 31, each Division, for each Province,

INSPECTION DIVISIONS.	WEIGHTS.									MEASURES OF CAPACITY.					
	Dominion.			Troy and Decimal.			Miscellaneous			Dominion.			Miscellaneous.		
	Brought for Verification.	Verified.	Rejected.	Brought for Verification.	Verified.	Rejected.	Brought for Verification.	Verified.	Rejected.	Brought for Verification.	Verified.	Rejected.	Brought for Verification.	Verified.	Rejected.
Belleville	3,663	3,663	....	....	....	..	8	8	...	6,075	6,075	...	114	114	..
Hamilton	12,224	12,210	14	....	....	..	48	48	..	7,130	7,124	6	542	541	1
Ottawa	6,695	6,672	23	....	....	..	....	....	....	2,134	2,115	19	121	121	..
Toronto	9,244	9,233	11	....	....	..	4	4	....	26,392	26,392	...	2,198	2,198	.
Windsor	3,980	3,978	2	....	....	..	22	22	....	24,511	24,511	..	.....	.....	..
Ontario	35,806	35,756	50	....	....	..	82	82	....	66,242	66,217	25	2,975	2,974	1
Montreal	11,813	11,806	7	314	314	..	72	72	....	26,372	26,372	...	6,193	6,174	19
Quebec	8,251	8,020	231	....	....	..	169	155	14	6,864	6,853	11	101	101	.
St. Hyacinthe	2,136	2,136	....	....	....	..	....	....	....	3,166	3,165	1	129	129	..
Three Rivers	2,464	2,464	....	....	....	..	....	....	....	2,381	2,381	..	24	24	..
Quebec	24,664	24,426	238	314	314	..	241	227	14	38,783	38,771	12	6,447	6,428	19
St. John, N.B.	2,293	2,293	....	....	....	..	....	....	....	4,578	4,578	...	1,483	1,478	5
Cape Breton	379	375	4	....	....	..	....	....	....	279	279	...	19	19	..
Halifax	1,344	1,344	....	....	....	..	11	11	....	912	912	...	171	171	..
Pictou	859	859	....	....	....	..	3	3	....	716	716	...	100	100	..
Nova Scotia	2,582	2,578	4	....	....	..	14	14	...	1,907	1,907	...	290	290	..
Charlottetown, P.E.I.	765	765	...	...	....	..	....	....	....	175	175	...	21	21	..
Winnipeg, Man.	3,287	3,287	...	....	....	..	46	46	....	4,961	4,961	...	179	179	..
Calgary, Alta	440	440	....	....	....	..	....	....	....	403	403	...	14	14	.
Nelson	153	153	...	....	....	..	...	....	....	100	100	...	2	2	..
Vancouver	973	973	....	....	....	..	10	10	....	68	68	...	.....	....	..
British Columbia	1,126	1,126	....	....	....	..	10	10	....	168	168	...	2	2	..
Dawson, Yukon	57	57	....	....	....	..	49	49	....	.....	.....	...	..	.....	..
Grand Totals	71,020	70,728	292	314	314	..	442	428	14	117,217	117,180	37	11,411	11,386	25

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

SESSIONAL PAPER No. 13

B.

1908, showing the Total Number brought for Verification, Verified and Rejected, for and for the whole Dominion.

Measures of Length.			Balances, &c.											
			Equal Armed.			Steelyards.			Platform Scales, Weigh Bridges, &c.			Miscellaneous.		
Brought for Verification.	Verified.	Rejected.	Brought for Verification.	Verified.	Rejected.	Brought for Verification.	Verified.	Rejected.	Brought for Verification.	Verified.	Rejected.	Brought for Verification.	Verified.	Rejected.
422	422	....	721	721	.	130	130	....	3,736	3,736	.. .	617	617	....
2,231	2,144	87	3,373	3,255	118	2.532	2,486	46	6,884	6,333	551	2,990	2,956	34
319	319	....	1,061	1,048	13	2	2	....	3,142	3,110	32	258	258	....
1,071	1,071	....	1,991	1,984	7	461	447	14	3,163	3,112	51	4,900	4,888	12
207	207	....	783	777	6	268	268	....	4,524	4,464	60	2,994	2,993	1
4,250	4,163	87	7,929	7,785	144	3,393	3,333	60	21,449	20,755	694	11,759	11,712	47
1,445	1,445	....	2,832	2,825	7	1,390	1,382	8	7,394	7,328	66	5,943	5,929	14
1,277	1,250	27	1,202	1,179	23	393	374	19	2,197	2,149	48	271	269	2
358	358	....	394	392	2	147	146	1	1,716	1,682	34	117	115	2
124	124	...	397	392	5	29	28	1	1,329	1,323	6	45	45	....
3,204	3,177	27	4,825	4,788	37	1,959	1,930	29	12,636	12,482	154	6,376	6,358	18
19	19	...	486	486	....	41	41	....	920	915	5	723	723	....
72	72	....	62	62	....	5	5	....	287	287	....	46	46	...
44	44	....	317	317	....	31	31	....	698	685	13	171	171	....
133	133	....	175	175	....	21	21	....	477	477	....	127	127	....
249	249	....	554	554	. ..	57	57	....	1,462	1,449	13	344	344	....
9	9	....	162	162	....	17	17	....	423	423	....	74	74	....
424	424	...	716	715	1	102	100	2	3,640	3,555	85	448	448	....
73	73	....	77	77	....	30	30	....	970	962	8	189	189	....
32	32	....	29	29	....	28	28	....	293	292	1	94	94	....
..	.	... ..	202	202	...	91	91	...	485	485	....	1,173	1,173	....
32	32	...	231	231	...	119	119	....	778	777	1	1,267	1,267	....
...	.....	....	.. ..	.....	. .	5	5	....	37	37	....	11	11	....
8,260	8,146	114	14,980	14,798	182	5,723	5,632	91	42,315	41,355	960	21,191	21,126	65

W. J. GERALD,
Deputy Minister.

8-9 EDWARD VII., A. 1909

APPENDIX

RETURN showing the number of Dominion Weights and Lineal Measures of each Fiscal Year ended

INSPECTION DIVISIONS.	DOMINION Avoir													
	60 lbs.	50 lbs.	30 lbs.	20 lbs.	10 lbs.	7 lbs.	5 lbs.	4 lbs.	3 lbs.	2 lbs.	1 lb.	8 ozs.	4 ozs.	2 ozs.
Belleville	....	....	...	....	16	6	96	191	436	825	770	389	304	262
Hamilton	....	21	....	1	7	4	417	103	2,719	3,573	3,286	442	401	372
Ottawa	....	...	...	....	6	4	101	70	215	441	383	886	824	804
Toronto	....	30	2	2	254	15	719	1,101	596	2,649	1,724	574	417	402
Windsor	....	...	...	....	2	....	64	154	359	867	783	400	377	365
Ontario	....	51	2	3	285	29	1,397	1,619	4,325	8,355	6,946	2,691	2,353	2,205
Montreal	156	107	3	9	93	29	681	643	1,015	2,317	2,099	1,392	1,154	896
Quebec	....	48	10	21	85	84	445	615	611	1,219	1,212	1,061	1,056	874
St. Hyacinthe	...	...	....	....	11	6	123	89	297	431	409	222	215	162
Three Rivers	...	....	....	..	3	2	177	119	374	439	404	306	296	200
Quebec	156	155	13	30	192	121	1,426	1,466	2,297	4,406	4,124	2,981	2,721	2,132
St. John, N.B.	...	....	....	2	....	20	99	140	185	548	487	273	210	163
Cape Breton	...	113	..	5	7	1	41	.....	71	73	49	10	5	4
Halifax	....	...	...	1	5	16	39	79	117	402	332	116	91	76
Pictou	....	7	1	3	8	7	25	53	112	214	164	71	61	59
Nova Scotia	....	120	1	9	20	24	105	132	300	689	545	197	157	139
Charlottetown, P.E.I.	....	....	....	..	..	1	18	37	60	212	176	69	55	50
Winnipeg, Man.	....	2	2	3	22	13	107	174	237	849	755	206	183	178
Calgary, Alta.	....	....	....	....	1	....	4	11	31	87	81	42	42	42
Nelson	....	....	....	....	1	...	2	10	14	38	32	11	11	11
Vancouver	....	....	....	....	...	....	31	63	18	320	334	100	26	36
British Columbia	....	...	....	....	1	...	33	73	32	358	366	111	37	47
Dawson, Yukon	....	....	....	....	....	...	8	1	10	15	15	8	...	...
Grand Totals	156	328	18	47	521	208	3,197	3,653	7,477	15,519	13,495	6,578	5,758	4,956

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

SESSIONAL PAPER No. 13

C.

Denomination presented for Verification in each Inspection Division during the March 31, 1908.

Weights.									Lineal Measures.									
dupois.							Troy and Decimal Weights.	Miscellaneous Weights.	6 feet.	5 feet.	1 yard.	½ yard.	2 feet.	1 foot.	½ foot.	100 feet chains.	66 feet chains.	Tape or riband.	Total Number.	Miscellaneous Measures.
1 oz.	8 drs.	4 drs.	2 drs.	1 dr.	½ dr.	Total Number.														
206	106	42	9	5	....	3,663	.....	8	....	....	422	..	..	..	..	..	..	..	422	.. ..
443	302	86	25	18	4	12,224	...	48	....	....	2,231	..	..	..	..	..	..	..	2,231	.. ..
955	932	787	282	3	2	6,695	.....	.. ..	..	..	319	..	..	..	..	..	..	..	319	.....
315	211	120	37	46	....	9,244	.. ..	4	...	...	1,071	..	..	..	..	..	..	..	1,071	.... ..
332	189	76	8	3	1	3,980	...	22	....	....	207	..	..	..	..	..	..	..	207	.... .
2,251	1,740	1111	361	75	7	35,806	..	82	....	....	4,250	..	..	..	..	..	..	..	4,250	.....
648	300	126	62	83	....	11,813	314	72	....	....	1,445	..	..	..	..	..	..	..	1,445	..... .
637	206	47	11	9	...	8,251	.....	169	....	....	1,277	..	..	..	..	..	..	..	1,277	.. ....
128	35	8	....	....	....	2,136	..	....	....	..	358	..	..	..	..	..	..	..	358	.....
122	20	1	1	..	....	2.464	.....	.....	....	....	124	..	..	..	..	..	..	..	124	.....
1,535	561	182	74	92	....	24,664	314	241	...	....	3,904	..	..	..	..	..	..	..	3,204	.....
112	35	16	3	....	...	2,293	.	...	....	....	19	..	..	..	..	..	..	..	19	. .....
.....	.	....	....	....	...	379	.....	.....	....	....	72	..	..	..	..	..	..	..	72	.. ....
49	13	6	2	..	....	1,344	.....	11	....	....	44	..	..	..	..	..	..	..	44	.... ..
41	23	9	1	....	...	859	.....	3	....	....	133	..	..	..	..	..	..	..	133	....
90	36	15	3	....	...	2,582	... .	14	....	...	249	..	..	..	..	..	..	..	249	.....
41	26	12	4	4	...	765	.....	.. .	....	....	9	..	..	..	..	..	..	..	9	.....
178	145	127	87	18	1	3,287	.. ...	46	....	....	424	..	..	..	..	..	..	.	424	. .....
42	25	19	9	4	...	440	..	.....	...	..	73	.	..	..	..	..	..	..	73	.....
10	8	5	....	. .	....	153	....	... .	....	....	32	..	..	..	..	..	..	..	32	.....
44	1	...	....	...	...	973	. ..	10	...	...	....	..	..	..	..	..	..	..	. ...	.... .
54	9	5	....	...	...	1,126	.....	10	....	....	32	..	..	..	..	..	..	..	32	.....
. ....	....	....	..	....	....	57	.....	49	...	...	.....	..	..	..	..	..	..	..	...	.....
4,303	2,577	1487	541	193	8	71,020	314	442	....	....	8,260	..	..	..	..	..	..	..	8,260	.....

W. J. GERALD,
Deputy Minister.

8-9 EDWARD VII., A. 1909

APPENDIX

RETURN showing the Number of Dominion Weights and Lineal Measures of each March 31,

INSPECTION DIVISIONS.	DOMINION Avoir													
	60 lbs.	50 lbs.	30 lbs.	20 lbs.	10 lbs.	7 lbs.	5 lbs.	4 lbs.	3 lbs.	2 lbs.	1 lb.	8 ozs.	4 ozs.	2 ozs.
Belleville					16	6	96	191	436	825	770	389	304	262
Hamilton		21		1	7	4	417	103	2,719	3,572	3,285	440	399	370
Ottawa					6	4	97	63	205	441	381	886	824	804
Toronto		30	2	2	254	15	719	1,101	596	2,647	1,722	572	445	401
Windsor					2		64	154	359	867	783	400	377	364
Ontario		51	2	3	285	29	1,393	1,612	4,315	8,352	6,941	2,687	2,349	2,201
Montreal	156	107	3	9	93	29	680	641	1,015	2,314	2,098	1,392	1,154	896
Quebec		48	10	20	78	80	431	593	597	1,177	1,165	1,027	1,030	861
St. Hyacinthe				11	6	123	89	297	431	409	222	215	162	128
Three Rivers					3	2	177	119	374	439	404	306	296	200
Quebec	156	155	13	40	180	234	1,377	1,650	2,417	4,339	3,889	2,940	2,642	2,085
St. John, N.B				2		20	99	140	185	548	487	273	210	163
Cape Breton		110		5	7	1	40		71	73	49	10	5	4
Halifax				1	5	16	39	79	117	402	332	116	94	76
Pictou		7	1	3	8	7	25	53	112	214	164	71	61	59
Nova Scotia,		117	1	9	20	24	104	132	300	689	545	197	157	139
Charlottetown, P.E.I.						1	18	37	60	212	176	69	55	50
Winnipeg, Man		2	2	3	22	13	107	174	237	849	755	206	183	178
Calgary, Alta					1		4	11	31	87	81	42	42	42
Nelson					1		2	10	14	38	32	11	11	11
Vancouver							31	63	18	320	334	100	26	36
British Columbia					1		33	73	32	358	366	111	37	47
Dawson, Yukon							8	1	10	15	15	8		
Grand totals	156	325	18	57	509	321	3,143	3,830	7,587	15,449	13,255	6,533	5,675	4,905

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

SESSIONAL PAPER No. 13

C—*Continued.*

Denomination, Verified in each Inspection Division during the Fiscal Year ended 1908—*Continued.*

Weights.									Lineal Measures.										
dupois.							Troy and Decimal Weights.	Miscellaneous Weights.											Miscellaneous Measures.
1 oz.	8 drs.	4 drs.	2 drs.	1 dr.	½ dr.	Total Number.			6 feet.	5 feet.	1 yard.	½ yard.	2 feet.	1 foot.	½ foot.	100 feet chains.	66 feet chains.	Tape or riband.	Total Number.	
206	106	42	9	5	....	3,663	....	8	....	....	422	....	....	....	....	....	....	....	422	.....
440	300	85	25	18	4	12,210	....	48	....	....	2,144	....	....	....	....	....	....	....	2,144	.....
955	932	787	282	3	2	6,672	.....	.....	....	....	319	....	....	....	....	....	....	....	319	.....
314	210	120	37	46	....	9,233	.....	4	....	....	1,071	....	....	....	....	....	....	....	1,071	.....
331	189	76	8	3	1	3,978	....	22	....	....	207	....	....	....	....	....	....	....	207	.....
2,246	1,737	1110	361	75	7	35,756	.....	82	....	....	4,163	....	....	....	....	....	....	....	4,163	.....
648	300	126	62	83	....	11,806	314	72	....	....	1,445	....	....	....	....	....	....	....	1,445	.....
632	204	47	11	9	....	8,020	....	155	....	....	1,250	....	....	....	....	....	....	....	1,250	.....
35	8	....	....	....	....	2,136	.....	.....	....	....	358	....	....	....	....	....	....	....	358	.....
122	20	1	1	....	....	2,464	....	....	....	....	124	....	....	....	....	....	....	....	124	.....
1,437	532	174	74	92	....	24,426	314	227	....	....	3,177	....	....	....	....	....	....	....	3,177	....
112	35	16	3	....	....	2,293	.....	.....	....	....	19	....	....	....	....	....	....	....	19	....
....	....	....	....	....	....	375	....	....	....	....	72	....	....	....	....	....	....	....	72	.....
49	13	6	2	....	....	1,344	....	11	....	....	44	....	....	....	....	....	....	....	44	.....
41	23	9	1	....	....	859	....	3	....	....	133	....	....	....	....	....	....	....	133	.....
96	36	15	3	....	....	2,578	.....	14	....	....	249	....	....	....	....	....	....	....	249	.....
41	26	12	4	4	....	765	.....	.....	....	....	9	....	....	....	....	....	....	....	9	.....
178	145	127	87	18	1	3,287	.....	46	....	....	424	....	....	....	....	....	....	....	424	.....
42	25	19	9	4	....	440	.....	.....	....	....	73	....	....	....	....	....	....	....	73	.....
10	8	5	....	....	....	153	....	....	....	....	32	....	....	....	....	....	....	....	32	.....
44	1	....	....	....	....	973	.....	10	....	....	....	....	....	....	....	....	....	....	.....	.....
54	9	5	....	....	....	1,126	.....	10	....	....	32	....	....	....	....	....	....	....	32	.....
.....	.....	....	....	....	....	57	.....	49	....	....	....	....	....	....	....	....	....	....	.....	....
4,200	2,545	1478	541	193	8	70,728	314	428	....	....	8,146	....	....	....	....	....	....	....	8,146	.....

W. J. GERALD,
Deputy Minister.

APPENDIX

RETURN showing the number of Dominion Weights and Lineal Measures of each March 31,

INSPECTION DIVISIONS.	DOMINION													
	Avoir													
	60 lbs.	50 lbs.	30 lbs.	20 lbs.	10 lbs.	7 lbs.	5 lbs.	4 lbs.	3 lbs.	2 lbs.	1 lb.	8 ozs.	4 ozs.	2 ozs.
Belleville														
Hamilton										1	1	2	2	2
Ottawa							4	7	10		2			
Toronto										2	2	2	2	1
Windsor										1	1			
Ontario							4	7	10	4	6	4	4	3
Montreal							1	2		3	1			
Quebec				1	7	4	14	22	14	42	47	34	26	13
St. Hyacinthe														
Three Rivers														
Quebec				1	7	4	15	24	14	45	48	34	26	13
St. John, N.B.														
Cape Breton		3				1								
Halifax														
Pictou														
Nova Scotia		3				1								
Charlottetown, P.E.I.														
Winnipeg, Man.														
Calgary, Alta														
Nelson														
Vancouver														
British Columbia														
Dawson, Yukon														
Grand totals		3		1	7	5	19	31	24	49	54	38	30	16

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

SESSIONAL PAPER No. 13

C—*Concluded.*

Denomination, Rejected in each Inspection Division during the Fiscal Year ended 1908—*Concluded.*

Weights.							Troy and decimal Weights.	Miscellaneous Weights.	Lineal Measures.									Miscellaneous Measures.
dupois.																		
1 oz.	8 drs.	4 drs.	2 drs.	1 dr.	½ dr.	Total Number.			6 feet.	5 feet,	1 yard.	½ yard.	2 feet.	1 foot.	½ foot.	100 feet chains.	66 feet chains.	Tape or Kiband.	Total Number.	
3	2	1				14					87								87	
						23														
1	1					11														
						2														
4	3	1				50					87								87	
						7														
5	2					231		14			27								27	
5	2					238		14			27								27	
						4														
						4														
9	5	1				292		14			114								114	

W. J. GERALD,
Deputy Minister.

8-9 EDWARD VII., A. 1909

APPENDIX

RETURN showing the Number of Dominion Measures of Capacity, Balances and Inspection Division, during the

INSPECTION DIVISIONS.	MEASURES OF CAPACITY. Dominion.											
	Bushel.	½ Bushel.	Peck.	Gallon.	½ Gallon.	Quart.	Pint.	½ Pint.	Gill.	½ Gill.	Total Number.	Miscellaneous.
Belleville	84	298	329	915	1,339	1,688	1,206	210	6	....	6,075	114
Hamilton	8	122	350	812	1,162	2,364	1,974	321	12	5	7,130	542
Ottawa	....	1	58	413	528	678	326	122	8	....	2,134	121
Toronto	30	590	628	3,810	3,222	6,205	9,854	2,053	....	....	26,392	2,198
Windsor	1,465	2,026	1,095	3,257	3,168	6,730	5,729	1,041	....	....	24,511	....
Ontario	1,587	3,037	2,460	9,207	9,419	17,665	19,089	3,747	26	5	66,242	2,975
Montreal	30	858	1,083	3,559	4,484	6,693	6,583	2,613	468	1	26,372	6,193
Quebec	....	229	189	984	1,709	1,714	1,389	543	104	3	6,864	101
St. Hyacinthe	.....	113	104	459	852	815	499	262	62	....	3,166	129
Three Rivers	....	21	32	384	718	684	381	141	20	....	2,381	24
Quebec	30	1,221	1,408	5,386	7,763	9,906	8,852	3,559	654	4	38,783	6,447
St. John, N.B	.....	168	238	693	1,157	1,131	989	199	3	....	4,578	1,483
Cape Breton	.....	4	.....	56	132	66	17	3	1	....	279	19
Halifax	.....	15	12	167	262	239	152	59	4	2	912	171
Pictou	.....	14	13	99	262	260	63	4	1	....	716	100
Nova Scotia	.....	33	25	322	656	565	232	66	6	2	1,907	290
Charlottetown, P.E.I	.....	....	.....	9	28	64	73	1	....	...	175	21
Winnipeg, Manitoba	54	8	2	932	1,258	1,345	1,241	119	1	1	4,961	179
Calgary, Alberta	5	2	5	94	158	101	36	2	....	..	403	14
Nelson	.....	.....	....	18	44	27	9	2	....	....	100	2
Vancouver	....	.....	1	17	4	3	43	.....	....	....	68	.....
British Columbia	.....	.....	1	35	48	30	52	2	....	....	168	2
Dawson, Yukon	.....	.....	.....	.. .	.....	.....	. ....	... ..	....	....	.....	.....
Grand totals	1,676	4,469	4,139	16,678	20,487	30,807	30,564	7,695	690	12	117,217	11,411

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

SESSIONAL PAPER No. 13

D.

Weighing Machines of Each Denomination, Presented for Verification, in each Fiscal Year ended March 31, 1908.

BALANCES.

With equal arms.				Steelyards with divided arms.				Weigh Bridges or Platform Scales.							
5 lbs. and under.	6 lbs. to 50 lbs.	51 lbs. to 100 lbs.	101 lbs. and upwards.	500 lbs. and under.	501 lbs. to 1,000 lbs.	1,001 lbs. to 2,000 lbs.	2,001 lbs. and upwards.	250 lbs. and under.	251 lbs. to 500 lbs.	501 lbs. to 2,000 lbs.	2,001 lbs. to 4,000 lbs.	4,001 lbs. to 6,000 lbs.	6,001 lbs. and upwards.	Total.	Miscellaneous.
258	463	...	....	124	1	4	1	1,259	306	1,525	227	84	335	4,587	617
1,387	1,986	....	....	2,495	34	2	1	3,843	115	2,288	236	71	331	12,789	2,990
832	229	....	....	2	....	....	....	616	371	1,969	49	43	94	4,205	258
606	1,383	1	1	430	16	10	5	1,034	123	1,246	332	66	362	5,615	4,900
358	425	.. .	...	256	11	1	..	814	112	2,667	277	93	561	5,575	2,994
3,441	4,486	1	1	3,307	62	17	7	7,566	1,027	9,695	1,121	357	1,683	32,771	11,759
1,013	1,814	2	3	1,349	12	1	28	2,744	1,224	2,650	229	192	355	11,616	5,943
239	929	3	31	387	....	....	6	847	596	594	70	17	73	3,792	271
114	280	....	....	146	1	....	....	609	380	507	24	68	128	2,257	117
57	340	.. .	....	29	....	....	....	445	424	411	6	21	22	1,755	45
1,423	3,363	5	34	1,911	13	1	34	4,645	2,624	4,162	329	298	578	19,420	6,376
141	345	....	....	38	2	1	....	381	172	256	28	10	73	1,447	723
7	50	....	5	4	1	....	....	130	35	48	6	10	58	354	46
105	210	1	1	31	...	....	....	328	75	178	20	17	80	1,046	171
54	119	....	2	21	....	....	....	201	61	128	21	27	39	673	127
166	379	1	8	56	1	....	....	659	171	354	47	54	177	2,073	344
56	106	....	...	17	....	....	...	138	58	183	17	11	16	602	74
289	425	2	....	96	4	2	....	1,127	36	1,112	256	509	600	4,458	448
48	29	....	...	19	1	8	2	166	16	193	41	205	349	1,077	189
17	12	....	...	20	1	6	1	134	6	98	8	3	44	350	94
116	86	...	...	80	3	6	2	243	21	181	21	1	18	778	1,173
133	98	....	....	100	4	12	3	377	27	279	29	4	62	1,128	1,267
.. ..	.....	....	....	.....	2	3	....	19	.. ..	15	3	.. ..	. . .	42	11
5,697	9,231	9	43	5,544	89	44	46	15,078	4,131	16,249	1,871	1,448	3,538	63,018	21,191

W. J. GERALD,
Deputy Minister.

APPENDIX

RETURN showing the Number of Dominion Measures of Capacity, Balances and during the Fiscal Year

INSPECTION DIVISIONS.	MEASURES OF CAPACITY. Dominion. Bushel.	½ Bushel.	Peck.	Gallon.	½ Gallon.	Quart.	Pint.	½ Pint.	Gill.	½ Gill.	Total Number.	Miscellaneous.
Belleville	84	298	329	915	1,339	1,688	1,206	210	6	...	6,075	114
Hamilton	8	122	347	810	1,162	2,363	1,974	321	12	5	7,124	541
Ottawa	.....	1	53	408	524	673	326	122	8	...	2,115	121
Toronto	36	590	628	3,810	3,222	6,205	9,854	2,053	....	....	26,392	2,198
Windsor	1,465	2,026	1,095	3,257	3,168	6,730	5,729	1,041	....	....	24,511	.....
Ontario	1,587	3,037	2,452	9,200	9,415	17,659	19,089	3,747	26	5	66,217	2,974
Montreal	30	858	1,083	3,559	4,484	6,693	6,583	2,613	468	1	26,372	6,174
Quebec	.....	229	189	980	1,705	1,712	1,388	543	104	3	6,853	101
St. Hyacinthe	.	113	104	459	851	815	499	262	62	....	3,165	129
Three Rivers	.....	21	32	384	718	684	381	141	20	....	2,381	24
Quebec	30	1,221	1,408	5,382	7,758	9,904	8,851	3,559	654	4	38,771	6,428
St. John, N.B.	.....	168	238	693	1,157	1,131	989	199	3	...	4,578	1,478
Cape Breton	.....	4	.....	56	132	60	17	3	1	....	279	19
Halifax	.....	15	12	167	262	239	152	59	4	2	912	171
Pictou	.....	14	13	99	262	260	63	4	1	....	716	100
Nova Scotia	.....	33	25	322	656	565	232	66	6	2	1,907	290
Charlottetown, P.E.I.	.....	.....	.....	9	28	64	73	1	..	....	175	21
Winnipeg, Man	54	8	2	932	1,258	1,345	1,241	119	1	1	4,961	179
Calgary, Alta	5	2	5	94	158	101	36	2	...	...	403	14
Nelson	.....	...	....	18	44	27	9	2	....	....	100	2
Vancouver	...	.....	1	17	4	2	43	.....	....	....	68	....
British Columbia	.....	.....	1	35	48	30	52	2	....	...	168	2
Dawson, Yukon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand totals	1,676	4,469	4,131	16,667	20,478	30,799	30,563	7,695	690	12	117,180	11,386

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

SESSIONAL PAPER No. 13

D.—*Continued.*

Weighing Machines of Each Denomination, Verified in each Inspection Division, ended March 31, 1908.—*Continued.*

BALANCES.

With equal arms.				Steel yards with divided arms.				Weigh Bridges or Platform Scales.							
5 lbs. and under.	6 lbs. to 50 lbs.	51 lbs. to 100 lbs.	101 lbs. and upwards.	500 lbs. and under.	501 lbs. to 1,000 lbs.	1,001 lbs. to 2,000 lbs.	2,001 lbs. and upwards.	250 lbs. and under.	251 lbs. to 500 lbs.	501 lbs. to 2,000 lbs.	2,001 lbs. to 4,000 lbs.	4,001 lbs. to 6,000 lbs.	6,001 lbs. and upwards.	Total.	Miscellaneous.
258	463	....	...	124	1	4	1	1,259	306	1,525	227	84	335	4,587	617
1,373	1,882	....	....	2,452	33	1	...	3,684	101	2,055	183	61	249	12,074	2,956
825	223	....	....	2	..	..	....	604	367	1,959	47	41	92	4,160	258
605	1,377	1	1	416	16	10	5	1,012	122	1,230	325	66	357	5,543	4,888
358	419	....	....	256	11	1	....	802	112	2,643	273	91	543	5,509	2,993
3,419	4,364	1	1	3,250	61	16	6	7,361	1,008	9,412	1,055	343	1,576	31,873	11,712
1,011	1,809	2	3	1,341	12	1	28	2,733	1,213	2,619	224	188	351	11,535	5,929
236	910	3	30	372	....	....	2	840	572	582	67	17	71	3,702	269
114	278	...	..	145	1	...	....	604	366	497	23	66	126	2,220	115
56	336	....	...	28	....	....	..	445	422	409	5	20	22	1,743	45
1,417	3,333	5	33	1,886	13	1	30	4,622	2,573	4,107	319	291	570	19,200	6,358
141	345	...	....	38	2	1	.. .	378	171	255	28	10	73	1,442	723
7	50	....	5	4	1	...	....	130	35	48	6	10	58	354	46
105	210	1	1	31	....	....	...	325	74	175	18	17	76	1,033	171
54	119	....	2	21	...	....	...	201	61	128	21	27	39	673	127
166	379	1	8	56	1	....	....	656	170	351	45	54	173	2,060	344
56	106	....	....	17	....	.. .	....	138	58	183	17	11	16	602	74
288	425	2	.. .	94	4	2	...	1,114	35	1,085	247	489	585	4,370	448
48	29	....	.. .	19	1	8	2	165	15	191	39	204	348	1,063	189
17	12	...	....	20	1	6	1	134	6	98	8	3	43	349	94
116	86	....	....	80	3	6	2	243	21	181	21	1	18	778	1,173
133	98	...	....	100	4	12	3	377	27	279	29	4	61	1,127	1,267
.. ...	. ..	....	....	....	2	3	....	19	.....	15	3	....	....	42	11
5,668	9,079	9	42	5,460	88	43	41	14,830	4,057	15,878	1,782	1,406	3,402	61,785	21,126

W. J. GERALD,
Deputy Minister.

APPENDIX

RETURN showing the Number of Dominion Measures of Capacity, Balances and Weigh
Fiscal Year ended

Inspection Divisions.	Measures of Capacity.											
	Dominion.											
	Bushel.	½ Bushel.	Peck.	Gallon.	½ Gallon.	Quart.	Pint.	½ Pint.	Gill.	¼ Gill.	Total Number.	Miscellaneous.
Belleville												
Hamilton			3	2		1					6	1
Ottawa			5	5	4	5					19	
Toronto												
Windsor												
Ontario			8	7	4	6					25	1
Montreal												19
Quebec				4	4	2	1				11	
St. Hyacinthe					1						1	
Three Rivers												
Quebec				4	5	2	1				12	19
St. John, N. B.												5
Cape Breton												
Halifax												
Pictou												
Nova Scotia												
Charlottetown, P.E.I												
Winnipeg, Man												
Calgary, Alberta												
Nelson												
Vancouver												
British Columbia												
Dawson, Yukon												
Grand totals			8	11	9	8	1				37	25

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

SESSIONAL PAPER No. 13

D—*Concluded.*

ing Machines of each Denomination, Rejected, in each Inspection Division, during the March 31, 1908.

BALANCES.

With Equal Arms.				Steelyards with Divided Arms.				Weigh Bridges or Platform Scales.							
5 lbs. and under.	6 lbs. to 50 lbs.	51 lbs. to 100 lbs.	101 lbs. and upwards.	500 lbs. and under.	501 lbs. to 1,000 lbs.	1,001 lbs. to 2,000 lbs.	2,001 lbs. and upwards.	250 lbs. and under.	251 lbs. to 500 lbs.	501 lbs. to 2,000 lbs.	2,001 lbs. to 4,000 lbs.	4,001 lbs. to 6,000 lbs.	6,001 lbs. and upwards.	Total.	Miscellaneous.
14	104			43	1	1	1	159	14	233	53	10	82	715	34
7	6							12	4	10	2	2	2	45	
1	6			14				22	1	16	7		5	72	12
	6							12		24	4	2	18	66	1
22	122			57	1	1	1	205	19	283	66	14	107	898	47
2	5			8				11	11	31	5	4	4	81	14
3	19		1	15			4	7	24	12	3		2	90	2
	2			1				5	14	10	1	2	2	37	2
1	4			1					2	2	1	1		12	
6	30		1	25			4	23	51	55	10	7	8	220	18
								3	1	1				5	
								3	1	3	2		4	13	
								3	1	3	2		4	13	
1				2				13	1	27	9	20	15	88	
								1	1	2	2	1	1	8	
													1	1	
													1	1	
29	152		1	84	1	1	5	248	74	371	89	42	136	1,233	65

W. J. GERALD,
Deputy Minister.

APPENDIX E.

STATEMENT of Gas Inspection Expenditures and Revenues for the Fiscal Year ended March 31, 1908.

Districts.	Inspectors and Assistants.	Expenditures.						Revenues.
		Salaries.	Special Assistance	Rent.	Travelling Expenses	Sundries.	Totals.	
		$ cts.	$ cts.	$ crt.	$ cts.	$ cts.	$ cts.	$ cts.
Barrie	Shanacy, M	100 00					100 00	101 50
Belleville	Johnson, Wm. Stuart, W. E.	449 96		162 50			612 46	543 00
Berlin	Broadfoot, S.	100 00			35 40	40 98	176 38	374 25
Brockville	Johnston, C.W.(actg)					14 90	14 90	219 50
Cobourg	Bickle, J. W.	100 00			25 95	29 35	155 30	176 25
Cornwall	Mulhern, M. M.	100 00				36 90	136 90	54 75
Guelph	Broadfoot, S.	200 00				35 46	235 46	469 25
Hamilton	McPhie, D. Dennis, W. A. Murphy, F. C. McPhie, W. H.	3,249 96		120 00	288 60	427 92	4,086 48	5,373 75
Kingston	Gallagher, Thos.	400 00		40 50		76 44	516 94	308 25
Listowell	Male, Thos.	100 00		78 00		12 40	190 40	46 50
London	Nash, A. F. Skelton, A. R.	1,833 25			200 90	110 95	2,145 10	3,801 50
Napanee	Johnson, Wm. (actg)				19 35	8 35	27 70	57 00
Ottawa	Roche, H. G. Bond, M. B. Roche, W. J.	1,841 59	686 63			75 53	2,603 75	2,133 25
Owen Sound	Graham, W. J.	200 00		125 00			325 00	107 25
Peterborough	Rork, Thos.	150 00				4 00	154 00	247 00
Sarnia	Thrasher, W. A.					5 45	5 45	476 25
Stratford	Rennie, Geo.	200 00				13 50	213 50	139 25
Toronto	Johnstone, J. K. Pape, Jas Whyte, J. A. Hunter, W. M.	4,052 84			10 80	573 69	4,637 33	12,448 25
Woodstock	Orr, H. N.	100 00			3 75	17 50	121 25	327 75
	Ontario	13,177 60	686 63	526 00	584 75	1,483 32	16,458 30	27,404 50
Montreal	Aubin, A. O'Flaherty, M. J. Aubin, Chs.	4,168 76		240 00	73 30	175 43	4,657 49	9,347 75
Quebec	LeVasseur, N. Béland, F. X. J. E.	1,400 00		150 00	11 15	173 93	1,735 08	1,075 25
Sherbrooke	Simpson, A. F. Bowen, F. C.	249 96					249 96	77 50
St. Hyacinthe	Benoit, L. V.	100 00					100 00	78 50
	Quebec	5,918 72		390 00	84 45	349 36	6,742 53	10,579 00
Fredericton	Wilson, J. E.	100 00			88 10		188 10	36 75
St. John	Wilson, J. E.	1,100 00			74 75	9 20	1,183 95	597 50
	New Brunswick	1,200 00			162 85	9 20	1,372 05	634 25
Halifax, N.S.	Ritchie, A. J. Colter, W. F. Munn, H. D. Toale, John.	1,363,79	250 00	403 67	253 42	117 74	2,388 62	376 25
Charlottetown, P.E.I	Bell, J. H.	450 00				15 88	465 88	84 25
Winnipeg, Man.	Magness, R. Mager, J. G.	1,099 92	100 00		277 05	33 75	1,510 72	2,317 75

APPENDIX E—*Concluded*

STATEMENT of Gas Inspection Expenditures and Revenues for the Fiscal Year ended March 31, 1908.

Districts.	Inspectors.	Expenditures.						Revenues.
		Salaries.	Special Assistance	Rent.	Travelling Expenses.	Sundries.	Total.	
		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Nanaimo	McAloney, J. A... / Shaw, John	93 24	.....	.....	.....	.....	93 24	36 00
New Westminster	Wolfenden, Wm.	100 00	.....	.....	.....	.....	100 00	72 00
Vancouver	Miller, J. E.	225 00	.....	.....	106 75	71 43	403 18	1,808 00
Victoria	Jones, R.	224 94	.....	.....	.....	.....	224 94	720 50
	British Columbia.	643 18	.....	.....	106 75	71 43	821 36	2,636 50

RECAPITULATION.

—	Expenditures.						Revenues.
	Salaries.	Special Assist'nce.	Rent.	Travelling Expenses.	Sundries.	Total.	
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts	$ cts.
Ontario	13,177 60	686 63	526 00	584 75	1,483 32	16,458 30	27,404 50
Quebec	5,918 72	.....	390 00	84 45	349 36	6,742 53	10,579 00
New Brunswick	1,200 00	.....	.....	162 85	9 20	1,372 05	634 25
Nova Scotia	1,363 79	250 00	403 67	253 42	117 74	2,388 62	376 25
Prince Edward Island	450 00	.....	.....	.....	15 88	465 88	84 25
Manitoba	1,099 92	100 00	.....	277 05	33 75	1,510 72	2,317 75
British Columbia	643 18	.....	.....	106 75	71 43	821 36	2,636 50
Chief Inspector	100 00	.....	.....	.....	.....	100 00	.....
General expenditure	.....	.....	.....	.....	248 15	248 15	.....
Printing	.....	.....	.....	.....	321 74	321 74	.....
Stationery	.....	.....	.....	.....	495 00	495 00	.....
Lithographing	.....	.....	.....	.....	90 00	90 00	.....
Grand totals	23,953 21	1,036 63	1,319 67	1,469 27	3,235 57	31,014 35	44,032 50

W. J. GERALD,
Deputy Minister.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

APPENDIX

RETURN of the Illuminating Power and Purity of Gas

INSPECTION OFFICES.	ILLUMINATING POWER.—STANDARD. 16 Candles.					SULPHUR PER 100 Allowance.—		
	Highest.	Lowest.	Average.	No. of times below standard.	No. of Tests.	Highest	Lowest.	Average
	Candles.	Candles.	Candles.			Grains.	Grains.	Grains.
Barrie—								
April			17·90	0	1			
May			16·30	0	1			
June			16·90	0	1			
July			17·40	0	1			
August			19·90	0	1			
September			16·30	0	1			
October			16·10	0	1			
November			17·20	0	1			
December			17·20	0	1			
January			15·20	1	1			
February			16·10	0	1			
March			17·10	0	1			
				1	12			
Belleville—								
April	20·59	18·67	19·66	0	3			
May			17·00	0	1			
June								
July			20·59	0	1			
August	19·13	18·99	19·06	0	2			
September	19·34	18·69	19·01	0	2			
October	21·14	19·44	20·29	0	2			
November	21·43	18·04	19.73	0	2			
December	17·62	15·97	16·79	0	2			
January	19·33	18·00	18·66	0	2			
February	17·86	15·10	15·96	3	5			
March	18·89	17·90	18·39	0	3			
				3	25			
Deseronto—								
April			18·80	0	1			
May			19·00	0	1			
June			19·03	0	1			
July			21·30	0	1			
August			18·60	0	1			
September			21·90	0	1			
October			20·90	0	1			
November			19·80	0	1			
December			20·90	0	1			
January			20·70	0	1			
February			20·09	0	1			
March			18·06	0	1			
				0	12			

SESSIONAL PAPER No. 13

F.

Inspected during the Year ended March 31, 1908.

Cubic Feet. 35 Grains.		Ammonia per 100 Cubic Feet. Allowance—4 Grains.					Sulphuretted Hydrogen.			Remarks.
No. of times in excess of allowance.	No. of tests.	Highest.	Lowest.	Average.	Times in excess of allowance.	No. of Tests.	No. of times absent.	No. of times present.	No. of Tests.	
		Grains.	Grains.	Grains.						
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							12	0	12	
							3	0	3	
							1	0	1	
										Operations stopped by fire.
							1	0	1	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							5	0	5	
							2	0	2	
							24	0	24	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							12	0	12	

APPENDIX

Return of the Illluminating Power and Purity of Gas

Inspection Offices.	Illuminating Power.—Standard. 16 Candles.					Sulphur per 100 Allowance—		
	Highest.	Lowest.	Average.	No. of times below standard.	No. of Tests.	Highest	Lowest.	Average
	Candles.	Candles.	Candles.			Grains.	Grains.	Grains.
Berlin—								
April			19·35	0	1			
May			19·10	0	1			
June			20·34	0	1			
July			17·86	0	1			
August			17·88	0	1			
September			19·49	0	1			
October			19·52	0	1			
November			19·79	0	1			
December			18·14	0	1			
January			17·39	0	1			
February			16·94	0	1			
March			17 81	0	1			
				0	12			
Brockville—								
April	19 92	19·85	19·93	0	2			
May	20·07	20·00	20·03	0	2			
June	20·40	19·90	20·15	0	2			
July	20·20	20·20	20·20	0	2			
August	20·85	19·88	20·36	0	2			
September	20·00	19·86	19·93	0	2			
October	20·85	20·48	20·66	0	2			
November	19·76	19·69	19·72	0	2			
December	20·26	19·82	20·04	0	2			
January	20·02	20·00	20·01	0	2			
February	20·84	20·18	20·51	0	2			
March	20·32	20·01	20·16	0	2			
				0	24			
Cobourg—								
April			17·03	0	1			
May			17·61	0	1			
June			18·07	0	1			
July			19·43	0	1			
August			16·90	0	1			
September			17·67	0	1			
October			17·66	0	1			
November			18·03	0	1			
December			18·08	0	1			
January			17·47	0	1			
February			17·96	0	1			
March			17·82	0	1			
				0	12			

F—*Continued.*

Inspected during the Year ended March 31, 1908.

Cubic Feet. 35 Grains.		Ammonia per 100 Cubic Feet. Allowance—4 Grains.					Sulphuretted Hydrogen.			Remarks.
No. of times in excess of allowance.	No. of tests.	Highest.	Lowest.	Average.	Times in excess of allowance.	To. of Tests.	No. of times absent.	No. of times present.	No. of Tests.	
		Grains.	Grains.	Grains.						
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							12	0	12	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							24	0	24	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							24	0	24	

APPENDIX

Return of the Illuminating Power and Purity of Gas

Inspection Offices.	Illuminating Power.—Standard. 16 Candles.					Sulphur per 100 Allowance—		
	Highest.	Lowest.	Average.	No. of times below standard.	No. of Tests.	Highest	Lowest.	Average
	Candles.	Candles.	Candles.			Grains.	Grains.	Grains.
Port Hope—								
April			21·09	0	1			
May			18·31	0	1			
June			21·84	0	1			
July			17·88	0	1			
August			18·60	0	1			
September			19·88	0	1			
October			19·70	0	1			
November			18·42	0	1			
December			18·44	0	1			
January			19·22	0	1			
February			18·64	0	1			
March			19·19	0	1			
				0	12			
Cornwall—								
April			18·15	0	1			
May			18·05	0	1			
June			18·10	0	1			
July			18·30	0	1			
August			18·05	0	1			
September			18·00	0	1			
October			18·20	0	1			
November			18·15	0	1			
December			18·05	0	1			
January			18·30	0	1			
February			18·05	0	1			
March			18·05	0	1			
				0	12			
Guelph—								
April			17·03	0	1			
May			17·33	0	1			
June			18·38	0	1			
July			17·38	0	1			
August			17·04	0	1			
September			19·52	0	1			
October			18·00	0	1			
November			17·94	0	1			
December			17·12	0	1			
January			17·86	0	1			
February			16·83	0	1			
March			17·57	0	1			
				0	12			

F—*Continued.*

Inspected during the Year ended March 31, 1908.

Cubic Feet. 35 Grains.		Ammonia per 100 Cubic Feet. Allowance—4 Grains.					Sulphuretted Hydrogen.			Remarks.
No. of times in excess of allowance.	No. of Tests.	Highest.	Lowest.	Average.	Times in excess of allowance.	No. of Tests.	No. of times absent.	No. of times present.	No. of Tests.	
		Grains.	Grains.	Grains.						
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							24	0	24	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							12	0	12	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							12	0	12	

APPENDIX

RETURN of the Illuminating Power and Purity of Gas

INSPECTION OFFICES.	ILLUMINATING POWER—STANDARD. 16 Candles.					SULPHUR PER 100 Allowance—		
	Highest.	Lowest.	Average.	No. of times below standard.	No. of Tests.	Highest	Lowest.	Average
	Candles.	Candles.	Candles.			Grains.	Grains.	Grains.
Hamilton—								
April	17·07	17·06	17·06	0	2			
May	17·86	16·99	17·42	0	2			
June	17·44	17·13	17·28	0	2			
July	17·06	16·93	16·99	0	2			
August	17·50	17·09	17·29	0	2			
September	17·62	17·31	17·48	0	3			
October	17·34	17·07	17·20	0	2			
November	17·52	17·44	17·48	0	2			
December	17·46	17·29	17·37	0	2			
January	17·55	17·37	17·46	0	2			
February	17·89	17·73	17·81	0	2			
March	18·17	18·05	18·10	0	3			
				0	26			
Bertie Natural Gas Co.—								
April								
May								
June								
July								
August								
September								
October								
November								
December								
January								
February								
March								
Brantford Natural Gas Co.—								
April								
May								
June								
July								
August								
September								
October								
November								
December								
January								
February								
March								

SESSIONAL PAPER No. 13

F—*Continued.*

Inspected during the Year ended March 31, 1908.

Cubic Feet. 35 Grains.		Ammonia per 100 Cubic Feet. Allowance—4 Grains.					Sulphuretted Hydrogen.			Remarks.
No. of times in excess of allowance.	No. of Tests.	Highest.	Lowest.	Average.	Times in excess of allowance.	No. of Tests.	No. of times absent.	No. of times present.	No. of Tests.	
		Grains.	Grains.	Grains.						
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							3	0	3	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							3	0	3	
							26	0	26	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							12	0	12	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							12	0	12	

APPENDIX

Return of the Illuminating Power and Purity of Gas

Inspection Offices.	Illuminating Power.—Standard. 16 Candles.					Sulphur per 100 Allowance—		
	Highest.	Lowest.	Average.	No. of times below standard.	No. of Tests.	Highest	Lowest.	Average
	Candles.	Candles.	Candles.			Grains.	Grains.	Grains.
Dominion Natural Gas Co., Dundas & Dunnville—								
April								
May								
June								
July								
August								
September								
October								
November								
December								
January								
February								
March								
Dominion Natural Gas Co., Galt—								
April								
May								
June								
July								
August								
September								
October								
November								
December								
January								
February								
March								
Mutual Natural Gas Co.— Welland and Port Colborne.								
April								
May								
June								
July								
August								
September								
October								
November								
December								
January								
February								
March								

SESSIONAL PAPER No. 13

F—*Continued.*

Inspected during the Year ended March 31, 1908.

Cubic Feet. 35 Grains.		Ammonia per 100 Cubic Feet. Allowance—4 Grains.					Sulphuretted Hydrogen.			Remarks.
No. of times in excess of allowance.	No. of Tests.	Highest.	Lowest.	Average.	Times in excess of allowance.	No. of Tests.	No. of times absent.	No. of times present.	No. of Tests.	
		Grains.	Grains.	Grains.						
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							12	0	12	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							12	0	12	
							0	1	1	
							0	1	1	
							0	1	1	
							0	1	1	
							0	1	1	
							0	1	1	
							0	1	1	
							0	1	1	
							0	1	1	
							0	1	1	
							0	1	1	
							0	12	12	

APPENDIX

Return of the Illuminating Power and Purity of Gas

Inspection Offices.	Illuminating Power.—Standard. 16 Candles.					Sulphur per 100 Allowance—		
	Highest.	Lowest.	Average.	No. of times below standard.	No. of Tests.	Highest	Lowest.	Average
	Candles.	Candles.	Candles.			Grains.	Grains.	Grains.
Port Colborne-Welland Natural Gas Co., Caledonia—								
April								
May								
June								
July								
August								
September								
October								
November								
December								
January								
February								
March								
St. Catharines and Niagara Power & Fuel Co. Ltd.—								
April								
May								
June								
July								
August								
September								
October								
November								
December								
January								
February								
March								
Ontario Pipe Line Co., Ltd.—								
April								
May								
June								
July								
August								
September								
October								
November								
December								
January								
February								
March								

SESSIONAL PAPER No. 13

F—*Continued.*

Inspected during the year ended March 31, 1908.

Cubic Feet. 35 Grains.		Ammonia per 100 Cubic Feet. Allowance—4 Grains.					Sulphuretted Hydrogen.			Remarks.
No. of times in excess of allowance.	No. of Tests.	Highest. Grains.	Lowest. Grains.	Average. Grains.	Times in excess of allowance.	No of Tests.	No of times absent.	No. of times present.	No. of Tests.	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							12	0	12	
							1	0	1	The name is changed to United Natural Gas Co. from Nov. 1, 1907.
							1	0	1	
							1	0	1	
							1	9	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							12	0	12	
							4	0	4	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							3	0	3	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							3	0	3	
							28	0	28	

APPENDIX

Return of the Illuminating Power and Purity of Gas

Inspection Offices.	Illuminating Power.—Standard. 16 Candles.					Sulphur per 100 Allowance—		
	Highest.	Lowest.	Average.	No. of times below standard.	No. of Tests.	Highest	Lowest.	Average
	Candles.	Candles.	Candles.			Grains.	Grains.	Grains.
Thorold Natural Gas Co.—								
April								
May								
June								
July								
August								
September								
October								
November								
December								
January								
February								
March								
Provincial Natural Gas Co.— Niagara Falls and Bridgeburg								
April								
May								
June								
July								
August								
September								
October								
November								
December								
January								
February								
March								
St. Catharines Gas Co.—								
April			16·99	0	1			
May			16·71	0	1			
June			16·38	0	1			
July			16·42	0	1			
August			16·54	0	1			
September			16·38	0	1			
October			16·28	0	1			
November			16·64	0	1			
December			17·44	0	1			
January			17·45	0	1			
February			17·78	0	1			
March			17·91	0	1			
				0	12			

F—*Continued.*

Inspected during the Year ended March 31, 1908.

Cubic Feet. 35 Grains.		Ammonia per 100 Cubic Feet. Allowance—4 Grains.					Sulphuretted Hydrogen.			Remarks.
No. of times in excess of allowance.	No. of Tests.	Highest. Grains.	Lowest. Grains.	Average. Grains.	Times in excess of allowance.	No. of Tests.	No. of times absent.	No. of times present.	No. of Tests.	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
										Incorporated with the United Natural Gas Co.
							4	0	4	
							0	1	1	
							0	1	1	
							0	1	1	
							0	1	1	
							0	1	1	
							0	1	1	
							0	1	1	
							0	1	1	
							0	1	1	
							0	1	1	
							0	1	1	
							0	12	12	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							12	0	12	

APPENDIX

Return of the Illuminating Power and Purity of Gas

Inspection Offices.	Illuminating Power.—Standard. 16 Candles.					Sulphur per 100 Allowance—		
	Highest.	Lowest.	Average.	No. of times below standard.	No. of Tests.	Highest	Lowest.	Average
	Candles.	Candles.	Candles.			Grains.	Grains.	Grains.
Kingston—								
April	19·91	19·08	19·49	0	2			
May	19·40	18·71	19·05	0	2			
June	19·46	18·12	18·79	0	2			
July	19·81	18·92	19·36	0	2			
August	20·01	19·54	19·77	0	2			
September	19·03	18·33	18·68	0	2			
October	18·71	18·01	18·36	0	2			
November	18·90	17·93	18·41	0	2			
December	19·08	17·04	18·06	0	2			
January	19·81	17·62	18·71	0	2			
February	19·03	18·94	18·98	0	2			
March	20·78	19·02	19·90	0	2			
				0	24			
Listowel—								
April			20·02	0	1			
May			19·20	0	1			
June			18·98	0	1			
July			20·46	0	1			
August			20·88	0	1			
September			20 20	0	1			
October			20·00	0	1			
November			19·00	0	1			
December			19·60	0	1			
January			18·94	0	1			
February			19·58	0	1			
March			21·14	0	1			
				0	12			
London—								
April	19·52	14·60	17·14	2	10			
May	18·27	16·05	17·08	0	8			
June	19·63	16·32	17·71	0	10			
July	18·86	17·30	17·95	0	8			
August	20·55	18·33	18·96	0	10			
September	19·66	16·63	18·30	0	8			
October	19·28	16·61	17·93	0	8			
November	18·87	16·97	18 00	0	10			
December	18·30	16·08	17·51	0	8			
January	18·52	16·29	17·62	0	8			
February	18·82	16·55	17·89	0	10			
March	19·00	16 52	17·82	0	8			
				2	106			

SESSIONAL PAPER No. 13

F—*Continued.*

Inspected during the Year ended March 31, 1908.

Cubic Feet. 35 Grains.		Ammonia per 100 Cubic Feet. Allowance—4 Grains.					Sulphuretted Hydrogen.			Remarks.
No. of times in excess of allowance.	No. of Tests.	Highest.	Lowest.	Average.	Times in excess of allowance.	No. of Tests.	No. of times absent.	No. of times present.	No. of Tests.	
		Grains.	Grains.	Grains.						
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							24	0	24	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							12	0	12	
							10	0	10	
							8	0	8	
							10	0	10	
							8	0	8	
							10	0	10	
							8	0	8	
							8	0	8	
							10	0	10	
							8	0	8	
							8	0	8	
							10	0	10	
							8	0	8	
							106	0	106	

APPENDIX

Return of the Illuminating Power and Purity of Gas

Inspection Offices.	Illuminating Power.—Standard. 16 Candles.					Sulphur per 100 Allowance—		
	Highest.	Lowest.	Average.	No. of times below standard.	No. of Tests.	Highest	Lowest.	Average
	Candles.	Candles.	Candles.			Grains.	Grains.	Grains.
Chatham—								
April								
May								
June								
July								
August								
September								
October								
November								
December								
January								
February								
March								
Ingersoll—								
April			19·71	0	1			
May	17·36	15·30	16·33	1	2			
June			18·86	0	1			
July			19·56	0	1			
August			17·30	0	1			
September			16·86	0	1			
October			20·26	0	1			
November			14·08	1	1			
December			17·08	0	1			
January			16·40	0	1			
February	13·83	13·23	13·53	2	2			
March	17·00	16·19	16 59	0	2			
				4	15			
St. Thomas—								
April			21·28	0	1			
May			17·52	0	1			
June			17.35	0	1			
July			16·44	0	1			
August			16·43	0	1			
September			16·75	0	1			
October			16·67	0	1			
November			16·52	0	1			
December			17·51	0	1			
January			16·77	0	1			
February			16·17	0	1			
March			16·50	0	1			
				0	12			

SESSIONAL PAPER No. 13

F—*Continued.*

Inspected during the Year ended March 31, 1908—*Continued.*

Cubic Feet. 35 Grains.		Ammonia per 100 Cubic Feet. Allowance—4 Grains.					Sulphuretted Hydrogen.			Remarks.
No. of times in excess of allowance.	No. of Tests.	Highest.	Lowest.	Average.	Times in excess of allowance.	No. of Tests	No. of times absent.	No. of times present.	No. of Tests.	
		Grains.	Grains.	Grains.						
							0	1	1	
							0	1	1	
							0	1	1	
							0	1	1	
							0	1	1	
							0	1	1	
							0	1	1	
							0	3	3	
							0	2	2	
							0	2	2	
							0	2	2	
							0	2	2	
							0	18	18	
							1	0	1	
							2	0	2	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							2	0	2	
							2	0	2	
							15	0	15	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							12	0	12	

APPENDIX

RETURN of the Illuminating Power and Purity of Gas

INSPECTION OFFICES.	ILLUMINATING POWER.—STANDARD. 16 Candles.					SULPHUR PER 100 Allowance—		
	Highest.	Lowest.	Average.	No. of times below standard.	No. of Tests.	Highest	Lowest.	Average
	Candles.	Candles.	Candles.			Grains.	Grains.	Grains.
Windsor—								
April			14·00	1	1			
May			17·28	0	1			
June	17·09	16·18	16·63	0	2			
July			16·65	0	1			
August			16·05	0	1			
September			16·14	0	1			
October			17·00	0	1			
November	16·66	16·04	16·35	0	2			
December			18·21	0	1			
January			17·42	0	1			
February	18·27	15·30	16·78	1	2			
March			18·19	0	1			
				2	15			
Napanee—								
April			22·23	0	1			
May			21·58	0	1			
June			21·24	0	1			
July			23·10	0	1			
August			20·63	0	1			
September			20·88	0	1			
October			20·19	0	1			
November			20·13	0	1			
December			21·20	0	1			
January			19·10	0	1			
February			19·97	0	1			
March			20·85	0	1			
				0	12			
Ottawa—								
April	16·94	16·46	16·74	0	8	14·76	14·58	14·67
May	16.94	16·06	16·51	0	9	14·95	14·58	14·76
June	16·90	16·36	16·53	0	9	14·93	14·60	14·76
July	16·77	16·06	16·51	0	9	14·97	14·58	14·77
August	16·73	16·33	16·51	0	9	14·95	14·29	14·62
September	16·66	16·28	16·48	0	9	14·75	14·54	14·64
October	16·70	16·23	16.49	0	9	14·63	14·37	14·50
November	16·90	16·06	16·52	0	9	15·15	14·93	15·04
December	16·77	16·32	16·48	0	8	14.95	14·59	14·77
January	16·90	16·23	16·56	0	8	14 98	14·93	14·95
February	16·97	16·24	16·64	0	8	14·64	14·38	14·51
March	16·73	16·31	16·57	0	10	14·85	14·63	14·74
				0	105			

F—*Continued.*

inspected during the Year ended March 31, 1908—*Continued.*

Cubic Feet. 35 Grains.		Ammonia per 100 Cubic Feet. Allowance—4 Grains.					Sulphuretted Hydrogen.			Remarks.
No. of times in excess of allowance.	No. of Tests.	Highest.	Lowest.	Average.	Times in excess of allowance.	No. of Tests.	No. of times absent.	No. of times present.	No. of Tests.	
		Grains.	Grains.	Grains.						
.....	.....	.....	.....	.....	.... ..	.....	1	0	1	
.....	.. ..	.....	.....	.....	.....	..	1	0	1	
.....	.	.....	.....	.....	.....	.....	2	0	2	
....	.....	....	....	....	.... ..	.....	1	0	1	
....	.....	. ....	.....	.. . .	.....	.....	1	0	1	
.....	.....	.....	.....	.....	.....	....	1	0	1	
.....	.....	....	....	.....	.....	.....	1	0	1	
.....	.....	. .....	.....	.. . .	.....	.....	2	0	2	
.....	. ....	.....	.....	.....	.....	...	1	0	1	
.... ..	.....	.....	.....	.....	.....	.....	1	0	1	
.....	.....	....	....	.....	.....	.....	2	0	2	
. .....	.....	....	.....	.....	.....	.....	1	0	1	
							15	0	15	
....	.....	.....	.....	.....	.....	.....	1	0	1	
.....	..	.....	... ..	. .....	.....	....	1	0	1	
.....	.....	. .....	....	....	.....	... .	1	0	1	
... ...	.....	.....	....	.....	... ...	.....	1	0	1	
.....	.....	.. ..	... .	....	.....	.....	1	0	1	
.....	.....	. .. .	....	.....	.....	. ...	1	0	1	
.....	.....	... .	.. ..	... .	.....	.....	1	0	1	
.....	.....	.....	.. ..	....	.....	.....	1	0	1	
.....	.....	.....	.....	.....	....	.... .	1	0	1	
.....	.. ..	....	.. . ...	.....	.....	.....	1	0	1	
.....	.....	.....	....	....	.....	... .	1	0	1	
.....	. ..	....	.. ...	... . ..	.....	.....	1	0	1	
							12	0	12	
0	2	2·09	2·03	2·06	0	2	8	0	8	
0	2	2·19	1·67	1·93	0	2	9	0	9	
0	2	2·16	1·43	1·79	0	2	9	0	9	
0	2	2·38	1·87	2·12	0	2	9	0	9	
0	2	2·37	2·27	2 32	0	2	9	0	9	
0	2	2·14	1·74	1·94	0	2	9	0	9	
0	2	2·17	2·04	2·10	0	2	9	0	9	
0	2	2·17	2·12	2·14	0	2	9	0	9	
0	2	2·03	1·96	1·99	0	2	8	0	8	
0	2	2·13	1·88	2·00	0	2	8	0	8	
0	2	2·18	1·98	2·08	0	2	8	0	8	
0	2	2·19	2·16	2·17	0	2	10	0	10	
0	24				0	24	105	0	105	

APPENDIX

Return of the Illuminating Power and Purity of Gas

Inspection Offices.	Illuminating Power.—Standard. 16 Candles.					Sulphur per 100 Allowance—		
	Highest.	Lowest.	Average.	No. of times below Standard.	No. of Tests.	Highest	Lowest	Average
	Candles.	Candles.	Candles.			Grains.	Grains.	Grains.
Owen Sound—								
April			16·50	0	1			
May			16·32	0	1			
June			16·70	0	1			
July			16·75	0	1			
August			16·00	0	1			
September			16·60	0	1			
October			17·00	0	1			
November			16·44	0	1			
December			16·00	0	1			
January			16·70	0	1			
February			16·00	0	1			
March			16·53	0	1			
				0	12			
Peterboro—								
April	19·20	18·00	18·60	0	2			
May	20·00	19·10	19·55	0	2			
June	21·00	19·10	20·05	0	2			
July	21·00	20·10	20·55	0	2			
August	21·00	20·00	20·60	0	2			
September	21·20	19·20	20·20	0	2			
October	19·20	18·40	18·80	0	2			
November	18·20	17·30	17·75	0	2			
December	18·00	17·50	17·75	0	2			
January	18·15	16·20	17·17	0	2			
February	18·20	16·60	17·40	0	2			
March	19·00	16·80	17·90	0	2			
				0	24			
Sarnia—								
April			21·14	0	1			
May			20·26	0	1			
June			18·88	0	1			
July			20·78	0	1			
August			19·14	0	1			
September			19·30	0	1			
October			17·32	0	1			
November			17·90	0	1			
December			18·52	0	1			
January			19·68	0	1			
February			20·00	0	1			
March			20·94	0	1			
				0	12			

SESSIONAL PAPER No. 13

F—*Continued.*

Inspected during the Year ended March 31, 1908—*Continued.*

Cubic Feet. 35 Grains.		Ammonia per 100 Cubic Feet. Allowance—4 Grains.					Sulphuretted Hydrogen.			Remarks.
No. of times in excess of allowance.	No. of Tests.	Highest.	Lowest.	Average.	Times in excess of allowance.	No. of Tests.	No. of times absent.	No. of times present.	No. of Tests.	
		Grains.	Grains.	Grains.						
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							12	0	12	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							2	0	2	
							24	0	24	
							1	0	1	
							1	0	1	
							1	0	1	
							0	1	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							11	1	12	

APPENDIX

Return of the Illuminating Power and Purity of Gas

Inspection Offices.	Illuminating Power.—Standard. 16 Candles.					Sulphur per 100 Allowance—		
	Highest.	Lowest.	Average.	No. of times below Standard.	No of Test.	Highest	Lowest	Average
	Candles.	Candles.	Candles.			Grains.	Grains.	Grains.
Stratford—								
April			16·76	0	1			
May			16·65	0	1			
June			16·75	0	1			
July			17·61	0	1			
August			17·23	0	1			
September			17·06	0	1			
October								
November			16·17	0	1			
December			17·08	0	1			
January			17·02	0	1			
February			16·10	0	1			
March			16·21	0	1			
				0	11			
Toronto—								
April	19·20	18·13	18·58	0	8	14·03	11·19	12·61
May	18·75	17·91	18·33	0	9	14·14	11·26	12·70
June	18·93	18·35	18·74	0	8	11·28	9·92	10·60
July	19·54	17·68	18·63	0	9	14·32	14·12	14·22
August	19·09	17·91	18·60	0	9	11·21	8·37	9·79
September	18·79	18·06	18·53	0	8	12·77	9·92	11·34
October	18·92	17·82	18·53	0	9	11·22	9·84	10·53
November	18·86	17·94	18·48	0	9	12·69	11·22	11·95
December	18·81	18·13	18·40	0	8	12·27	9·79	11·03
January	19·10	18·29	18·78	0	9	11·26	8·38	9·82
February	18·82	18·23	18·66	0	8	14·18	14·01	14·09
March	19·24	17·73	18·44	0	8			8·41
				0	102			
Woodstock—								
April			16·83	0	1			
May			17·02	0	1			
June			17·29	0	1			
July			16·28	0	1			
August			16·32	0	1			
September			16·52	0	1			
October			17·37	0	1			
November			16·92	0	1			
December			16·86	0	1			
January			16·89	0	1			
February			16·37	0	1			
March			16·80	0	1			
				0	12			

F—*Continued.*

Inspected during the Year ended March 31, 1908—*Continued.*

Cubic Feet. 35 Grains.		Ammonia per 100 Cubic Feet. Allowance—4 Grains.					Sulphuretted Hydrogen.			Remarks.
No. of times in excess of allowance.	No of Tests.	Highest. Grains.	Lowest. Grains.	Average. Grains.	Times in excess of allowance.	No. of Tests.	No. of times absent.	No. of times present.	No. of Tests.	
							1	0	1	Illness of officers.
							1	0	1	No tests.
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							11	0	11	
0	2	0·28	0·17	0·22	0	2	8	0	8	
0	2	1·53	0·00	0·76	0	2	9	0	9	
0	2	0·28	0·20	0·24	0	2	8	0	8	
0	2	0·25	0·15	0·20	0	2	9	0	9	
0	2	0·20	0·00	0·10	0	2	9	0	9	
0	2	0·25	0·23	0·24	0	2	8	0	8	
0	2	0·18	0·00	0·09	0	2	9	0	9	
0	2	0·20	0·17	0·18	0	2	9	0	9	
0	2	0·18	0·00	0·09	0	2	8	0	8	
0	2	1·26	0 76	1·01	0	2	9	0	9	
0	2	0·20	0·15	0·17	0	2	8	0	8	
0	1			0·15	0	1	8	0	8	
0	23				0	23	102	0	102	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							12	0	12	

APPENDIX

RETURN of the Illuminating Power and Purity of Gas

INSPECTION OFFICES.	ILLUMINATING POWER—STANDARD. 16 Candles.					SULPHER PER 100 Allowance—		
	Highest.	Lowest.	Average.	No. of times below standard.	No. of Tests.	Highest	Lowest.	Average
	Candles.	Candles.	Candles.			Grains.	Grains.	Grains.
Montreal—								
April	17·31	16·03	16·51	0	9	7·69	7·27	7·48
May	19·01	16·03	17·95	0	8	3·90	2·40	3·15
June	19·21	17·09	18·04	0	9	4·84	2·73	3·78
July	19·15	17·30	18·27	0	9	3·84	3·51	3·67
August	18·26	16·85	17 40	0	9	3 73	2·79	3·28
September	18·11	16·54	17·15	0	8	3·59	3·09	3·34
October	18·27	16·03	17·28	0	9	4·75	4·44	4·59
November	18·80	16·01	17·57	0	9	7·85	7·42	7·63
December	17·72	16·65	17·21	0	9	8 42	3·19	5·80
January	16·92	16·00	16·39	0	9	10·73	7·18	8·95
February	20·06	16·00	16·77	0	8	16·03	6·88	11·45
March	18·48	16·04	17·00	0	9	9·70	5·35	7·52
				0	105			
Quebec—								
April			18·44	0	1	20·21	20·14	20·17
May			18·35	0	1	19·73	17·64	18 68
June			18·43	0	1	23·01	15·19	19·10
July			18·45	0	1	20·38	19 68	20·03
August			18·87	0	1	20·59	19·66	20 12
September			17·99	0	1	20·34	16·59	18·46
October			18 06	0	1	23·40	19·62	21·51
November			17·51	0	1	16·69	9·28	12·98
December			17·89	0	1	20·36	14·01	17·18
January			17·95	0	1	17·32	15·87	16·59
February			17·14	0	1	17·84	16·97	17·40
March			17·90	0	1	21·18	16·69	18·93
				0	12			
Sherbrooke—								
April			16·55	0	1			
May			16·73	0	1			
June			18 12	0	1			
July			16·19	0	1			
August			17·36	0	1			
September			16·79	0	1			
October			17·78	0	1			
November			17 23	0	1			
December			17·22	0	1			
January			16·66	0	1			
February			16·53	0	1			
March			17·24	0	1			
				0	12			

SESSIONAL PAPER No. 13

F—*Continued.*

Inspected during the Year ended March 31, 1908.

Cubic Feet. 35 Grains.		Ammonia per 100 Cubic Feet. Allowance —4 Grains.					Sulphuretted Hydrogen.			Remarks.
No. of times in excess of allowance.	No. of Tests.	Highest.	Lowest.	Average.	Times in excess of allowance.	No. of Tests.	No. of times absent.	No. of times present.	No. of Tests.	
		Grains.	Grains.	Grains.						
0	2	.....	.....	0·00	0	2	13	0	13	
0	2	.....	.....	0·00	0	2	12	0	12	
0	2	.....	.....	0·00	0	2	13	0	13	
0	2	.....	.....	0·00	0	2	14	0	14	
0	2	.....	.....	0·00	0	2	13	0	13	
0	2	.....	.....	0·00	0	2	12	0	12	
0	2	.....	.....	0·00	0	2	13	0	13	
0	2	.....	.....	0·00	0	2	13	1	14	
0	2	.....	.....	0·00	0	2	13	0	13	
0	2	.....	.....	0·00	0	2	13	0	13	
0	2	.....	.....	0·00	0	2	12	0	12	
0	2	.....	.....	0·00	0	2	13	0	13	
0	24				0	24	154	1	155	
0	2	.....	.....	0·00	0	2	1	0	1	
0	2	.....	.....	0·00	0	2	1	0	1	
0	2	.....	.....	0·00	0	2	1	0	1	
0	2	.....	.....	0·00	0	2	2	0	2	
0	2	.....	.....	0·00	0	2	2	0	2	
0	2	.....	.....	0·00	0	2	2	0	2	
0	2	.....	.....	0·00	0	2	2	0	2	
0	2	.....	.....	0·00	0	2	2	0	2	
0	2	.....	.....	0·00	0	2	2	0	2	
0	2	.....	.....	0·00	0	2	2	0	2	
0	2	.....	.....	0·00	0	2	2	0	2	
0	24				0	24	21	0	21	
.....	.....	.....	.....	.....	.....	.....	1	0	1	
.....	.....	.....	.....	.....	.....	.....	1	0	1	
.....	.....	.....	.....	.....	.....	.....	1	0	1	
.....	.....	.....	.....	.....	.....	.....	1	0	1	
.....	.....	.....	.....	.....	.....	.....	1	0	1	
.....	.....	.....	.....	.....	.....	.....	1	0	1	
.....	.....	.....	.....	.....	.....	.....	1	0	1	
.....	.....	.....	.....	.....	.....	.....	1	0	1	
.....	.....	.....	.....	.....	.....	.....	1	0	1	
.....	.....	.....	.....	.....	.....	.....	1	0	1	
.....	.....	.....	.....	.....	.....	.....	1	0	1	
.....	.....	.....	.....	.....	.....	.....	1	0	1	
							12	0	12	

APPENDIX

Return of the Illuminating Power and Purity of Gas

Inspection Offices.	Illuminating Power—Standard. 16 Candles.					Sulpher per 100 Allowance—		
	Highest.	Lowest.	Average.	No. of times below standard.	No. of Tests.	Highest	Lowest.	Average
	Candles.	Candles.	Candles.			Grains.	Grains.	Grains.
St. Hyacinthe								
April			18·78	0	1			
May			18·98	0	1			
June			18·64	0	1			
July			18·78	0	1			
August			18·95	0	1			
September			18·83	0	1			
October			18·65	0	1			
November			18·72	0	1			
December			18·68	0	1			
January			18·83	0	1			
February			18·34	0	1			
March			18·34	0	1			
				0	12			
Fredericton—								
April			16·17	0	1			
May			16·55	0	1			
June			16·12	0	1			
July			16·48	0	1			
August			16·42	0	1			
September			16·95	0	1			
October			16·64	0	1			
November			16·81	0	1			
December			16·89	0	1			
January			17·14	0	1			
February			16·93	0	1			
March			17·15	0	1			
				0	12			
St. John—								
April	17·81	16·66	17·24	0	3			23·56
May	17·33	17·18	17·24	0	3			24·43
June	17·01	16·68	16·87	0	3			22·87
July	17·73	16·62	17·18	0	3			23·64
August	17·16	16·68	16·95	0	3			24·91
September	17·19	16·97	17·08	0	2			21·69
October	17·12	16·94	17·03	0	3			19·80
November	17·00	16·96	16·98	0	2			23·51
December	18·92	17·23	18·07	0	2			29·09
January	18·03	17·01	17·68	0	3	32·14	24·75	28·44
February	19·46	18·96	19·17	0	3			28·00
March	18·81	17·97	18·39	0	2			26·04
				0	32			

SESSIONAL PAPER No. 13

F—*Continued.*

Inspected during the Year ended March 31, 1908.

Cubic Feet. 35 Grains.		Ammonia per 100 Cubic Feet. Allowance—4 Grains.					Sulphuretted Hydrogen.			Remarks.
No. of times in excess of allowance.	No. of Tests.	Highest.	Lowest.	Average.	Times in excess of allowance.	No. of Tests.	No. of times absent.	No. of times present.	No. of Tests.	
		Grains.	Grains.	Grains.						
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							12	0	12	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							12	0	12	
0	1			0·00	0	1	3	0	3	
0	1			0 00	0	1	3	0	3	
0	1			0·00	0	1	3	0	3	
0	1			0·00	0	1	3	0	3	
0	1			0 00	0	1	3	0	3	
0	1			0·00	0	1	2	0	2	
0	1			0 00	0	1	3	0	3	
0	1			0 00	0	1	2	0	2	
0	1			0·00	0	1	2	0	2	
0	2			0·00	0	2	3	0	3	
0	1			0·00	0	1	3	0	3	
0	1			0 00	0	1	2	0	2	
0	13				0	13	32	0	32	

APPENDIX

Return of the Illuminating Power and Purity of Gas

Inspection Offices.	Illuminating Power.—Standard. 16 Candles.					Sulphur per 100 Allowance—		
	Highest.	Lowest.	Average.	No. of times below Standard.	No. of Tests.	Highest	Lowest.	Average
	Candles.	Candles.	Candles.			Grains.	Grains.	Grains.
Moncton—								
April			17·07	0	1			
May			18·20	0	1			
June			17·95	0	1			
July			18·70	0	1			
August			18·79	0	1			
September			18·89	0	1			
October			18·61	0	1			
November			19·16	0	1			
December			18·93	0	1			
January	18·28	16·40	17·34	0	2			
February			19·08	0	1			
March			19·27	0	1			
				0	13			
Halifax—								
April			17·88	0	1			28·39
May			16·70	0	1			25·51
June			17·19	0	1			17·23
July			19·37	0	1			15.00
August			18·53	0	1			17·00
September			17·49	0	1			25·00
October			17·77	0	1			32·13
November			17 65	0	1			32·00
December	17·71	17·68	17·69	0	2	24·96	17·63	42·59
January			17·26	0	1			19·45
February			17·50	0	1			17·63
March			17·56	0	1			29·29
				0	13			
Yarmouth—								
April			17·16	0	1			
May			16·72	0	1			
June			18·23	0	1			
July			17·36	0	1			
August			18·95	0	1			
September			16·72	0	1			
October			16·72	0	1			
November			18·70	0	1			
December	17·81	17·23	17·52	0	2			
January			17·65	0	1			
February			17·24	0	1			
March			16·77	0	1			
				0	13			

SESSIONAL PAPER No. 13

F—*Continued.*

Inspected during the Year ended March 21, 1908.

Cubic Feet. 35 Grains.		Ammonia per 100 Cubic Feet. Allowance—4 Grains.					Sulphuretted Hydrogen.			Remarks.
No. of times in excess of allowance.	No. of Tests.	Highest.	Lowest.	Average.	Times in excess of allowance.	No. of Tests.	No. of times absent.	No. of times present.	No. of Tests.	
		Grains.	Grains.	Grains.						
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							0	2	2	
							1	0	1	
							1	0	1	
							11	2	13	
0	1			0·00	0	1	1	0	1	
0	1			0·00	0	1	1	0	1	
0	1			0·00	0	1	1	0	1	
0	1			0·00	0	1	1	0	1	
0	1			0·00	0	1	1	0	1	
0	1			0·00	0	1	1	0	1	
0	1			0·00	0	1	1	0	1	
0	1			0·00	0	1	1	0	1	
0	2			0·00	0	1	2	0	2	
0	1			0·00	0	1	1	0	1	
0	1			0·00	0	1	1	0	1	
0	1			0·00	0	1	1	0	1	
0	13				0	12	13	0	13	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							2	0	2	
							1	0	1	
							1	0	1	
							1	0	1	
							13	0	13	

APPENDIX

Return of the Illuminating Power and Purity of Gas

Inspection Offices.	Illuminating Power,—Standard. 16 Candles.					Sulphur per 100 Allowance—		
	Highest.	Lowest.	Average.	No. of times below Standard.	No. of Tests.	Highest	Lowest.	Average
	Candles.	Candles.	Candles.			Grains.	Grains.	Grains.
Charlottetown—								
April								
May	17·48	15·96	16·72	1	2			
June	16·89	16·28	16·58	0	2			
July			14 86	1	1			
August	15·73	14·52	15·12	2	2			
September			15·52	1	1			
October			18·51	0	1			
November			19·91	0	1			
December			16·41	0	1			
January			20·08	0	1			
February			17·02	0	1			
March	18·36	17·11	17·73	0	2			
				5	15			
Winnipeg—								
April	17·38	16·24	16 92	0	8			
May	17·76	16·74	17·12	0	8			
June	18·19	16 70	17 21	0	8			
July	17·42	16·84	17·08	0	9			
August	17·80	16·48	17·09	0	9			
September	17·40	16·34	16·87	0	9			
October	18·09	16·29	17·14	0	9			
November	18·58	16·74	17·43	0	8			
December	17·27	18 90	16·54	0	9			
January	18·90	16·40	17 17	0	9			
February	18·10	17·12	17·49	0	8			
March	18·58	16·82	17·49	0	8			
				0	102			
Nanaimo—								
April			17·59	0	1			
May			17·44	0	1			
June			17 40	0	1			
July			17·43	0	1			
August			18·83	0	1			
September								
October								
November								
December								
January								
February								
March								
				0	5			

F—*Continued.*

Inspected during the Year ended March 31, 1908.

Cubic Feet. 35 Grains		Ammonia per 100 Cubic Feet. Allowance—4 Grains.					Sulphuretted Hydrogen.			Remarks.
No. of times in excess of allowance.	No. of Tests.	Highest.	Lowest.	Average.	Times in excess of allowance.	No. of Tests.	No. of times absent.	No. of times present.	No. of Tests.	
		Grains.	Grains.	Grains.						
							1	1	2	No tests.
							1	1	2	Fsozen gaz.
							1	0	1	
							2	0	2	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							2	0	2	
							13	2	15	
							8	0	8	
							8	0	8	
							8	0	8	
							9	0	9	
							9	0	9	
							9	0	9	
							9	0	9	
							8	0	8	
							9	0	9	
							9	0	9	
							8	0	8	
							8	0	8	
							102	0	102	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
										Illness of officer.
										"
										"
										Officer died.
							7	0	7	

APPENDIX

Return of the Illuminating Power and Purity of Gas

Inspection Offices.	Illuminating Power—Standard, 16 Candles.					Sulphur per 100 Allowance—		
	Highest.	Lowest.	Average.	No. of times below standard.	No. of Tests.	Highest	Lowest.	Average
	Candles.	Candles.	Candles.			Grains.	Grains.	Grains.
New Westminster—								
April			18·98	0	1			
May			18·75	0	1			
June			19·00	0	1			
July			18·92	0	1			
August			18·84	0	1			
September			19·11	0	1			
October			18·81	0	1			
November			18·72	0	1			
December			18·65	0	1			
January			18·95	0	1			
February			19·05	0	1			
March								
				0	11			
Vancouver—								
April			17·70	0	1			
May			17·40	0	1			
June			17·20	0	1			
July			16·70	0	1			
August			16·90	0	1			
September			16·70	0	1			
October			16·80	0	1			
November			17·00	0	1			
December			16·70	0	1			
January			16·80	0	1			
February			16·60	0	1			
March			16·75	0	1			
				0	12			
Victoria—								
April								
May								
June								
July								
August								
September								
October								
November								
December								
January								
February			17·34	0	1			
March			17·72	0	1			
				0	2			

Inland Revenue Department,
Ottawa, June 11, 1908.

SESSIONAL PAPER No. 13

F—*Concluded.*

Inspected for the Fiscal Year ended March 31, 1908.

Cubic Feet. 35 Grains.		Ammonia per 100 Cubic Feet. Allowance—4 Grains.					Sulphuretted Hydrogen.			Remarks.
No. of times in excess of allowance.	No. of Tests.	Highest.	Lowest.	Average.	Times in excess of allowance.	No. of Tests	No. of times absent.	No. of times present.	No. of Tests.	
		Grains.	Grains.	Grains.						
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							.....	.....	.....	No tests.
							11	0	11	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							1	0	1	
							12	0	12	
							.....	.....	....	Nil.
							.....	.....	....	"
							.....	.....	.....	"
							.....	.....	.....	"
							.....	.....	.....	"
							.....	.....	.....	"
							.....	.....	.....	"
							.....	.....	.....	"
							.....	.....	.....	"
							1	0	1	
							1	0	1	
							2	0	2	

W. J. GERALD,
Deputy Minister.

APPENDIX G.

STATEMENT of Gas Meters presented for Verification, Verified after first Rejection and Rejected for the year ended March 31, 1908.

	Presented for Verification.	Kind.		Verified as coming within the error tolerated by law.			Verified after first Rejection.			Rejected.			Totals Verified and Rejected.	
		Wet.	Dry.	Correct.	Fast.	Slow.	Correct.	Fast.	Slow.	Unsound.	Fast.	Slow.	Verified.	Rejected.
Barrie	71	....	71	4	31	26	....	5	1	....	4	....	67	4
Belleville	448	....	448	89	42	317	....	....	....	....	....	....	448	....
Berlin	344	....	344	....	66	274	....	....	1	....	3	....	343	1
Brockville	135	....	135	24	70	41	....	....	....	....	....	....	135	....
Cobourg	111	....	111	5	38	67	....	....	....	....	1	....	110	1
Cornwall	19	....	19	6	3	10	....	....	....	....	....	....	19	....
Guelph	356	....	356	....	130	220	....	....	3	....	3	....	353	3
Hamilton	4,144	5	4,139	1,011	556	2,574	....	....	....	....	2	1	4,141	3
Kingston	202	....	202	20	16	164	....	....	....	....	1	1	200	2
Listowel	7	....	7	....	3	4	....	....	....	....	....	....	7	....
London	2,905	....	2,905	719	552	1,593	....	1	....	1	22	17	2,865	40
Napanee	24	....	24	4	7	13	....	....	....	....	....	....	24	....
Ottawa	1,590	1	1,589	226	532	831	....	....	....	1	....	....	1,589	1
Owen Sound	73	....	73	57	3	13	....	....	....	....	....	....	73	....
Peterboro'	207	....	207	74	7	122	....	....	....	1	....	3	203	4
Sarnia	407	....	407	301	12	91	....	....	....	....	....	3	404	3
Stratford	108	....	108	26	35	28	....	....	....	3	14	2	89	19
Toronto	13,022	....	13,022	1,276	4,712	7,002	....	....	....	6	20	6	12,990	32
Woodstock	249	....	249	31	103	115	....	....	....	....	....	....	249	....
Montreal	10,797	....	10,797	1,640	5,255	3,747	....	....	....	42	76	37	10,642	155
Quebec	833	....	833	340	182	293	2	1	2	10	1	2	820	13
Sherbrooke	50	....	50	32	12	6	....	....	....	....	....	....	50	....
St. Hyacinthe	47	....	47	33	8	6	....	....	....	....	....	....	47	....
Fredericton	1	....	1	....	....	1	....	....	....	....	....	....	1	....
St. John	405	....	405	213	11	181	....	....	....	....	....	....	405	....
Halifax	179	....	179	157	6	16	....	....	....	....	....	....	179	....
Charlottetown	35	....	35	6	1	15	....	....	....	10	2	1	22	13
Winnipeg	1,787	....	1,787	1,019	57	711	....	....	....	....	....	....	1,787	....
Nanaimo	....	....	....	....	....	....	....	....	....	....	....	....	....	....
New Westminster	35	....	35	5	6	24	....	....	....	....	....	....	35	....
Vancouver	1,805	....	1,805	419	376	1,010	....	....	....	....	....	....	1,805	....
Victoria	666	....	666	113	109	444	....	....	....	....	....	....	666	....
Grand totals	41,062	6	41,056	7,850	12,941	19,959	2	7	7	74	149	73	40,768	294

W. J. GERALD,
Deputy Minister.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

APPENDIX H.

STATEMENT of Electric Light Inspection Expenditures and Revenues for the Fiscal Year ended March 31, 1908.

Districts.	Inspectors.	Expenditures.						Revenues.		
		Salaries.	Special Assistance.	Rent.	Travelling Expenses.	Sundries.	Total.	Licenses to Export Elec. Power Nat. Gas, &c.	Registration Fees.	Inspection Fees.
		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Belleville	Johnson, Wm	150 00			389 31	85 05	624 36		600 00	1,298 00
	Johnston, Chs. W.									
Hamilton	McPhie, D				161 20	1 45	162 65	200 00	325 00	2,890 75
London	Nash, A. F.		13 33		319 05	20 50	352 88		627 50	2,239 00
Ottawa	Roche, H. G				198 05		198 05		430 00	1,658 25
Toronto	Johnstone, J. K.									
	Renehan, M. J.		1,127 65		840 25	62 75	2,030 65		1,035 00	7,727 00
	Stiver, J. L									
	Johnstone, Stanley									
		150 00	1,140 98		1,907 86	169 75	3,368 59	200 00	3,017 50	15,813 00
	Ontario.									
Montreal	Aubin, A				71 90	9 65	81 55		210 00	7,521 25
Quebec	Levasseur, N				30 89	73 14	104 03		235 00	439 50
Sherbrooke	Simpson, A. F				55 65	4 15	59 80		235 00	282 75
St. Hyacinthe	Provost, J. E.	300 00			124 35	8 15	432 50		188 75	362 25
Three Rivers	Robitaille, G. W.	467 98			24 48	10 95	503 41		80 00	168 00
		767 98			307 27	106 04	1,181 29		948 75	8,673 75
	Quebec.									
St. John, N.B.	Wilson, J. E				230 65	6 36	237 01	25 00	255 00	1,481 25
Halifax, N.S.	Ritchie, A. J.				262 33	6 21	268 54		395 00	983 75
	Cotter, W. F.									
Charlottetown, P.E.I	Bell, J. H.				32 65	43 65	76 30		40 00	89 50
Winnipeg	Magness, R.		200 00		54 95	16 10	271 05		430 00	4,092 00
	Hamilton, Robt.									

APPENDIX H—*Concluded.*

STATEMENT of Electric Light Inspection Expenditures and Revenues for the Fiscal Year ended March 31, 1908—*Concluded.*

Districts.	Inspectors.	Expenditures.						Revenues.		
		Salaries.	Special Assistance.	Rent.	Travelling Expenses.	Sundries.	Total.	Licenses to Export Elec. Power Nat. Gas, &c.	Registration Fees.	Inspection Fees.
		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Calgary, Alta	Higman, O. Jr.	400 00		210 00	204 50	110 86	925 36		140 00	327 45
Vancouver	Miller, J. E.								305 00	3,940 75
Victoria	Jones, R.				18 50	26 30	44 80		65 00	1,198 75
	British Columbia				18 50	26 30	44 80		370 00	5,139 50
Dawson, Ykn		500 00					500 00		35 00	
Chief Elec. Eng'r		4,196 62	331 89		106 20	837 90	5,472 61			
Gen. Contingencies						4,554 82	4,554 82			
Printing						90 24	90 24			
Stationery						369 99	369 99			
Export of Elec. Pr						456 80	456 80			
		6,014 60	1,672 87	210 00	3,124 91	6,795 02	17,817 40	225 00	5,631 25	36,600 20

INLAND REVENUE DEPARTMENT,
OTTAWA, June, 11, 1908.

W. J. GERALD,
Deputy Minister.

APPENDIX I.

STATEMENT showing the number of Electric Light Meters Verified, Rejected and Verified after first Rejection, in each Inspection District for the Fiscal Year ended March 31, 1908.

Districts.	Number presented.	Verified as coming within the error tolerated by law.			Rejected.			Verified after first Rejection.		
		Correct.	Fast.	Slow.	Unsound.	Fast.	Slow.	Correct.	Fast.	Slow.
Belleville	1,012	535	265	212						
Hamilton	2,496	942	670	883			1			
London	2,136	1,027	456	647		1	5			
Ottawa	2,010	353	769	881	7					
Toronto	6,499	2,140	2,483	1,854		9	13			
Montreal	6,167	3,515	2,569	75		6	2			
Quebec	483	240	161	80	2					
Sherbrooke	271	206	39	26						
St. Hyacinthe	249	52	167	25	1	4				
Three Rivers	136	82	22	32						
St. John	1,052	507	266	271		6	2			
Halifax	857	788	32	25		7	5			
Charlottetown	89	37	33	19						
Winnipeg	3,709	2,751	362	596						
Calgary	385	97	160	126			2			
Vancouver	3,919	419	1,978	1,522						
Victoria	1,455	788	504	163						
Totals	32,925	14,479	10,936	7,437	10	33	30			

W. J. GERALD,
Deputy Minister.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

APPENDIX J.

STATEMENT showing the Electric Light Companies registered under the Electric Light Inspection Act, during the year ended March 31, 1908.

Districts.	From whom Collected.	Serial No.	By whom Collected.	Certificate for Fiscal Year.	Number of Lamps.			Registration Fees.	Totals.
					Arc.	Incandescent.	Totals.		
								$ cts.	$ cts.
Belleville	The Frankford Electric Light Co., Ltd	1	C. I. R., Belleville	1907–1908		300	300	5 00	
	W. P. Niles, Wellington	2	" "	"	18	500	680	10 00	
	The Corporation of Picton	3	" "	"	41	6,000	6,410	25 00	
	Fair & Sargent, Bancroft	4	" "	"		600	600	10 00	
	The Corporation of Madoc	5	" "	"	12	1,000	1,120	10 00	
	Marmora Electric Co., Ltd	6	" "	"		732	732	10 00	
	The Trenton Electric and Water Co., Ltd., Trenton and Belleville	7	" "	"	65	10,450	11,100	25 00	
	The Tweed Electric Light and Power Co	8	" "	"	7	1,100	1,170	10 00	
	The Vankleek Hill Electric Co., Ltd	1	C. I. R., Cornwall	1907–1908	5	1,495	1,545	10 00	
	Corporation of the Town of Alexandria	2	" "	"	3	1,500	1,530	10 00	
	St. Lawrence Power Co., Ltd., Mille Roches	3	" "	"	230	917	3,217	25 00	
	The Hawkesbury Electric Light and Power Co., Ltd	4	" "	"	4	1,926	1,976	10 00	
	Stormont Electric Light and Power Co., Ltd., Cornwall	5	" "	"	15	1,750	1,900	10 00	
	Joseph Bishop & Son, Crysler	6	" "	"		400	400	5 00	
	Corporation of the City of Kingston	1	C. I. R., Kingston	1907–1908	136	8,000	9,360	25 00	
	School of Mining, Kingston	2	" "	"	10	90	190	5 00	
	The Benjamin Manufacturing Co., Ltd., of the Village of Yarker	3	" "	"		300	300	5 00	
	A. A. Connoly, Yarker	4	" "	"		140	140	5 00	
	The Corporation of Napanee Heat, Light and Power Co	5	" "	"	38	1,500	1,880	10 00	
	Brighton Electric Light Co	1	C. I. R., Peterboro'	1907–1908		600	600	10 00	
	Colborne Electric Light Co	2	" "	"	20	850	1,050	10 00	
	The Light, Heat and Power Co., of Lindsay, Ltd	3	" "	"	101	8,000	9,010	25 00	
	Cobourg Water and Electric Co., Ltd	4	" "	"	28	6,200	6,480	25 00	
	The Port Hope Electric Light and Power Co., Ltd	5	" "	"	36	2,008	2,368	25 00	
	The Havelock Electric Light and Power Co., Ltd	6	" "	"	13	1,067	1,197	10 00	
	Water, Light and Power Commissioners, Fenelon Falls	7	" "	"	13	1,605	1,735	10 00	
	The Corporation of the Town of Campbellford	8	" "	"	37	3,618	3,988	25 00	
	W. C. Harrison, Norwood	9	" "	"	13	623	753	10 00	
	Forolds Co., Limited	10	" "	"	13	625	755	10 00	
	Bowmanville Electric Light Co	11	" "	"	17	1,500	1,670	10 00	
	Peterboro Light and Power Co., Ltd	12	" "	"	230	17,000	19,300	25 00	
	Otonabee Power Co., Ltd., Peterboro	13	" "	"	20	12,000	12,200	25 00	

	The Bobcaygeon Municipal Electric Light Plant	14	"	"	"	22	1,100	1,320	10 00	
	The Lakefield Electric Light Co.	15	"	"	"	8	1,000	1,080	10 00	
	D. J. Galbraith, Newcastle	16	"	"	"		400	400	5 00	
	The Brockville Light and Power Department	1	C. I. R., Prescott		1907-1908.	100	5,000	6,000	25 00	
	The Water and Light Commissioners, Prescott	2	"	"	"	10	3,500	3,600	25 00	
	Morrisburg Electric Light and Power Works (Municipal)	3	"	"	"		3,000	3,000	25 00	
	Gananoque Electric Light and Water Supply Co., Ltd	4	"	"	"	25	1,500	1,750	10 00	
	Corporation of the Village of Iroquois	5	"	"	"	13	1,451	1,581	10 00	
	Cardinal Electric Light Co., Ltd	6	"	"	"		1,400	1,400	10 00	
	Kemptville Milling Co., Ltd	7	"	"	"		1,200	1,200	10 00	
	The Westport Electric Light and Milling Co	8	"	"	"		400	400	5 00	
	Frank Elliott, Winchester	9	"	"	"		500	500	5 00	
	Merrickville Electric Light and Power Co	10	"	"	"		465	465	5 00	
										600 00
Hamilton	The Tilsonburg Electric Light Works	1	C. I. R., Brantford		1907-1908.	5	2,610	2,660	25 00	
	The Brantford Street Railway Co	2	"	"	"		150	150	5 00	
	H. Webster, Norwich	3	"	"	"		1,570	1,570	10 00	
	The Western Counties Electric Co., Ltd., Brantford	4	"	"	"	260	20,000	22,600	25 00	
	Simcoe Gas and Water Co., Ltd	5	"	"	"	33		330	5 00	
	James Munro, Embro	6	"	"	"		467	467	5 00	
	The Corporation of the Town of Paris	7	"	"	"	33	3,000	3,330	25 00	
	Woodstock Water and Light System	8	"	"	"	170	7,000	8,700	25 00	
	Ingersoll Electric Power and Light Co., Ltd	9	"	"	"	60	3,000	3,600	25 00	
	The Hamilton Cataract Power, Light and Traction Co., Ltd	1	C. I. R., Hamilton		1907-1908.		320	320	5 00	
	The Hamilton Electric Light and Power Co., Ltd	2	"	"	"	1,200	90,000	102,000	25 00	
	Electric Power and Manufacturing Co	3	"	"	"		200	200	5 00	
	The Dundas Electric Light Co	4	"	"	"	10	1,653	1,753	10 00	
	The Dunnville Electric Light Co., Ltd	1	C. I. R., St. Catharines		"	11	1,200	1,310	10 00	
	The Maple Leaf Rubber Co., Ltd	2	"	"	"	14	988	1,128	10 00	
	Corporation of the Town of Niagara	3	"	"	"		700	700	10 00	
	Corporation of the Town of Niagara Falls	4	"	"	"	75	8,000	8,750	25 00	
	The Hamilton Cataract, Power, Light and Traction Co., Ltd., Beamsville	5	"	"	"		561	561	10 00	
	Grimsby Electric Plant	6	"	"	"		608	608	10 00	
	The Lincoln Electric Light and Power Co., Ltd., St. Catharines	7	"	"	"	88	10,000	10,880	25 00	
	Welland Electric Co	8	"	"	"		1,875	1,875	10 00	
	Corporation of the Town of Thorold	9	"	"	"	28	1,700	1,980	10 00	
	Merritton Electric Light Co	10	"	"	"	24	1,500	1,740	10 00	
										325 00
London	London Electric Co., Ltd	1	C. I. R., London		1907-1908.	400	40,741	44,701	25 00	
	R. C. McLeay, Walford	2	"	"	"	16	320	480	5 00	
	West Lorne Electric Light Co., Ltd	3	"	"	"	6	350	410	5 00	
	The Alvinston Power Co., Ltd	4	"	"	"	13	420	550	10 00	
	City of St. Thomas, Light, Heat and Power Department	5	"	"	"	85	4,000	4,850	25 00	
	Corporation of the Town of Strathroy	6	"	"	"	18	4,000	4,180	25 00	
	The Petrolea Electric Light, Heat and Power Co., Ltd	7	"	"	"	39	3,500	3,890	25 00	
	The Sarnia Gas and Electric Light Co	8	"	"	"	112	6,000	7,120	25 00	
	H. C. Baird, Son & Co., Ltd., Parkhill	9	"	"	"	12	1,250	1,370	10 00	
	Walter Mitchell, Port Stanley	10	"	"	"		450	450	5 00	
	Hamilton & Pront, Forest	11	"	"	"	18	600	780	10 00	

APPENDIX J—*Continued.*

STATEMENT showing the Electric Light Companies registered under the Electric Light Inspection Act, during the year ended March 31, 1908—*Continued.*

Districts.	From whom collected.	Serial No.	By whom collected.	Certificate for Fiscal Year.	Number of Lamps. Arc.	Incandescent.	Totals.	Registration Fees.	Totals.
								$ cts.	$ cts.
London	The Dutton Electric Light Co., Ltd	12	C. I. R., London	1907-1908	4	640	680	10 00	
	C. D. Burdick, London	13	" "	1906-1907		1,600	1,600	7 50	
	C. D. Burdick, London	14	" "	1907-1908		1,600	1,600	10 00	
	Miss B. A. Gordon, Glencoe	15	" "	"	28	350	630	10 00	
	H. Cook & Sons, Lucan	16	" "	"		800	800	10 00	
	Town of Aylmer	17	" "	"	12	1,800	1,920	10 00	
	The Board of Water, Light and Heat Commissioners, St. Mary's, Ont	1	C. I. R., Stratford	1907-1908	80	4,000	4,800	25 00	
	John Patterson, Wroxeter	2	" "	"		400	400	5 00	
	Seaforth Electric Light, Heat and Power Co., Ltd	3	" "	"	34	1,650	1,990	10 00	
	J. A. Williams & Co., Zurich	4	" "	"		320	320	5 00	
	Corporation of the Town of Goderich	5	" "	"	52	3,000	3,520	25 00	
	Clinton Electric Light Co	6	" "	"	25	1,300	1,550	10 00	
	C. B. Sorell, Exeter	7	" "	"	15	1,200	1,350	10 00	
	Stratford Gas Co	8	" "	"	106	3,500	4,560	25 00	
	Listowel Gas and Electric Light Co., Ltd	9	" "	"	25		250	5 00	
	J. G. Field, Tavistock	10	" "	"		700	700	10 00	
	Corporation of the Town of Palmerston	11	" "	"	24	700	940	10 00	
	Corporation of the Town of Mitchell	12	" "	"	23	1,500	1,730	10 00	
	Corporation of the Town of Wingham	13	" "	"	40	3,000	3,400	25 00	
	James & Robert Thurll, Brussels	14	" "	"	9	500	590	10 00	
	Thomas Welsh, Hensall	15	" "	"		900	900	10 00	
	E. Livingstone, Blythe	16	" "	"	7	400	470	5 00	
	Hiram Walker & Sons, Ltd., Walkerville	1	C. I. R., Windsor	1907-1908	24	3,800	4,040	25 00	
	Sandwich, Windsor & Amherstburg Railway, Windsor	2	" "	"	7	11,800	11,870	25 00	
	The Kingsville Electric Light Co.	3	" "	"		1,450	1,450	10 00	
	Corporation of the Town of Dresden	4	" "	"	6	1,000	1,060	10 00	
	Corporation of the Village of Thamesville	5	" "	"		1,100	1,100	10 0	
	The Leamington Light and Electric Co., Ltd	6	" "	"	17	1,525	1,695	10 00	
	Corporation of the Town of Bothwell	7	" "	"	15	320	470	5 00	
	David W. Kitt, Tilbury	8	" "	"	13	1,200	1,330	10 00	
	W. H. McMackon, Ridgetown	9	" "	"	11	1,400	1,105	10 00	

	Chatham Gas Co., Ltd.	10	"	"	"	25	8,000	8,250	25 00	
	Amherstburg Electric Light Heat and Power Co., Ltd.	11	"	"	"	.....	1,300	1,300	10 00	
	Charles E. Naylor, Essex	12	"	"	"	8	1,000	1,080	10 00	
	Corporation of the Town of Blenheim	13	"	"	"	17	1,200	1,370	10 00	
	The Prenicer Electric Light, Heat and Power Co., Ltd., Wallaceburg	14	"	"	"	31	1 600	1,910	10 00	
	James A. Secord, Harrow	15	"	"	"	.....	470	470	5 00	
	Wigle Brothers, Windsor	16	"	"	"	....	400	400	5 00	
	Corporation of the City of Windsor	17	"	"	"	180	.....	1,800	10 00	
										627 50
Ottawa	Deschenes Electric Co., Ltd., Ottawa	1	C. I. R., Ottawa		1907–1908.	13	2,655	2,785	25 00	
	Albert MacLaren, Buckingham	2	"	"	"	40	2,900	3,309	25 00	
	Ottawa Electric Co	3	"	"	"	1,378	155,000	168,780	25 00	
	Corporation of the City of Ottawa	4	"	"	"	270	44,481	47,181	25 00	
	The Hull Electric Co., Hull and Aylmer	5	"	"	"	60	10,472	11,072	25 00	
	Pembroke Electric Light Co., Ltd	1	C. I. R., Perth		1907–1908.	45	5,000	5,450	25 00	
	Smith's Falls Electric Power Co., Ltd.	2	"	"	"	80	5,000	5,800	25 00	
	Mattawa Electric Light and Power Co., Ltd	3	"	"	"	13	986	1,116	10 00	
	North Bay Light, Heat and Power Co., Ltd.	4	"	"	"	24	4,000	4,240	25 00	
	Star Electric Co., Eganville	5	"	"	"	...	1,500	1,500	10 00	
	Arnprior Electric Light and Power Co., Ltd	6	"	"	"	.....	3,700	3,700	25 00	
	Corporation of the Town of Perth	7	"	"	"	46	.....	460	5 00	
	Carleton Place Electric Light Co.	8	"	"	"	13	2,600	2,730	25 00	
	Renfrew Power Co., Ltd.	9	"	"	"	54	3,000	3,540	25 00	
	Renfrew Electric Co., Ltd.	10	"	"	"	...	1,573	1,573	10 00	
	Canadian Electric and Water Power Co., Ltd., Perth	11	"	"	"	.....	3,500	3,500	25 00	
	Dowd Milling Co., Ltd., Pakenham	12	"	"	"	...	420	420	5 00	
	Corporation of the Town of Sudbury	13	"	"	"	30	3,000	3,300	25 00	
	The Citizens' Electric Co., Ltd., Smith's Falls	14	"	"	"	.....	1,400	1,400	10 00	
	Sturgeon Falls Electric Light and Power Co.	15	"	"	"	11	2,706	2,810	25 00	
	Corporation of the Town of Almonte	16	"	"	"	16	2,100	2,260	25 00	
	Canadian Copper Co., Copper Cliff	17	"	"	"	...	489	489	5 00	
										430 00
Toronto	Ratz Bros., Elmira	1	C. I. R., Guelph		1907–1908.	...	600	600	10 00	
	Galt Gas Light Co., Ltd.	2	"	"	"	75	6,500	7,250	25 00	
	Preston Heat and Light Commission	3	"	"	"	26	4,000	4,260	25 00	
	George Leighton, Harriston	4	"	"	"	18	800	980	10 00	
	The Berlin Light Commissioners	5	"	"	"	121	6,000	7,210	25 00	
	E. W. B. Snider, St. Jacobs	6	"	"	"	....	240	240	5 00	
	Board of Light and Heat Commissioners, Guelph	7	"	"	"	120	9,116	10,316	25 00	
	Corporation of Mount Forest	8	"	"	"	17	1,500	1,670	10 00	
	Waterloo Electric Light and Power Co.	9	"	"	"	27	3,950	4.220	25 00	
	Fergus Electric Light Plant	10	"	"	"	32	2,000	2,320	25 00	
	Drayton Electric Light Co.	11	"	"	"	....	463	463	5 00	
	Corporation of the Town of Hespeler	12	"	"	"	.....	1,500	1,500	10 00	
	Jacob Morley, New Hamburg	13	"	"	"	20	1,100	1,300	10 00	
	Canada Furniture Manufacturers, Ltd., Wiarton	1	C. I. R., Owen Sound		1907–1808.	17	1,389	1,559	10 00	
	H. Grutzner, Hanover	2	"	"	"	17	1,724	1,894	10 00	
	Thomas Andrews, Thornbury	3	"	"	"	9	600	690	10 00	
	Corporation of the Town of Kincardine	4	"	"	"	20	1,800	2,000	10 00	

APPENDIX J—*Continued.*

STATEMENT showing the Electric Light Companies registered under the Electric Light Inspection Act, during the Year ended March 31, 1908—*Continued.*

Districts.	From whom Collected.	Serial No.	By whom Collected.	Certificate for Fiscal Year.	Number of Lamps.			Registration Fees.	Totals.
					Arc.	Incandescent.	Totals.		
								$ cts.	$ cts.
Toronto	Crawford & McIntyre, Durham	5	C. I. R., Owen Sound	1907–1908	6	1,500	1,560	10 00	
	H. Cargill & Son, Cargill	6	" "	"		600	600	10 00	
	Wenger Milling Co., Ayton	7	" "	"		153	153	5 00	
	Corporation of the Town of Dundalk	8	" "	"		500	500	5 00	
	Minnis Bros., Markdale	9	" "	"		1,100	1,100	10 00	
	Corporation of the Town of Owen Sound	10	" "	"	52	12,624	13,144	25 00	
	Georgian Bay Milling and Power Co., Ltd., Meaford	11	" "	"	25	1,900	2,150	25 00	
	Paisley Electric Light Co	12	" z	"		900	900	10 00	
	Corporation of the Town of Collingwood	13	" "	"	63	3,000	3,630	25 00	
	Mildmay Electric Light Co	14	" "	"		300	300	5 00	
	Teeswater Electric Light Co	15	" z	"		350	350	5 00	
	The Saugeen Electric Light and Power Co., Ltd., Southampton and Port Elgin	16	" "	"		2,891	2,891	25 00	
	The Walkerton Electric Light and Power Co., Ltd	17	" "	"	18	1,751	1,931	10 00	
	Georgian Bay Power Co., Ltd., Eugenia	18	" "	"		400	400	5 00	
	Walter Stewart & Son, Lucknow	19	" "	"	13	400	530	10 00	
	Chesley Electric Light Co	20	" "	"	22	1,100	1,320	10 00	
	Alex. Dobson, Beaverton	1	C. I. R, Toronto	1907–1908		600	600	10 00	
	John Philip, Grand Valley and Arthur	2	" "	"		1,600	1,600	10 00	
	Toronto Electric Light Co., Ltd	3	" "	"	1,605	200,000	216,050	25 00	
	Aurora Electric Light Co	4	" "	"		450	450	5 00	
	George Copeland & Sons, Elmvale	5	" "	"		500	500	5 00	
	Oshawa Electric Light Co., Ltd	6	" "	"	16	1,800	1,960	10 00	
	Corporation of the Town of Huntsville	7	" "	"		1,500	1,500	10 00	
	Monthrop, Sharp & Jackson, Little Current	8	" z	"	8	600	680	10 00	
	Corporation of the Town of Newmarket	9	" "	"		3,500	3,500	25 00	
	Corporation of the Town of Orillia	10	z "	"	50	8,500	9,000	25 00	
	Corporation of Gravenhurst	11	" "	"		2,000	2,000	10 00	
	Corporation of the Village of Beeton	12	" "	"		750	750	10 00	
	Tagona Water and Light Co., Sault Ste. Marie	13	" "	"	215	11,333	13,483	25 00	
	Corporation of the Town of Barrie	14	" "	"	52	6,000	6,520	25 00	
	Corporation of the Town of Midland	15	" "	"	24	5,000	5,240	25 00	

	Corporation of the Town of Whitby	16	"	"	"	28	1,880	2,160	25 00	
	Sunderland Electric Power Co., Ltd	17	"	"	"		550	550	10 00	
	Corporation of the Village of Port Perry	18	"	"	"	3	600	630	10 00	
	Corporation of the Town of Bracebridge	19	"	"	"	9	4,000	4,090	25 00	
	Georgetown Electric Light and Power Co., Ltd	20	"	"	"	15	1,600	1,750	10 00	
	Cannington Electric Light Co	21	"	"	"	10	320	420	5 00	
	Jonas Byer, Stouffville	22	"	"	"		612	612	10 00	
	Corporation of the Town of Parry Sound	23	"	"	"	7	3,500	3,570	25 00	
	Corporation of the Village of Markham	24	"	"	"		480	480	5 00	
	Municipality of Weston	25	"	"	"	19	700	890	10 00	
	Alliston Electric Light Co	26	"	"	"		1,500	1,500	10 00	
	James Pickering, Shelburne	27	"	"	"	17	1,200	1,370	10 00	
	C. W. Watson, Orangeville	28	"	"	"		1,600	1,600	10 00	
	Joseph Knox, Staynor	29	"	"	"		800	800	10 00	
	Hamilton Cataract Power, Light and Traction Co., Ltd., Burlington	30	"	"	"		900	900	10 00	
	Corporation of the Village of Acton	31	"	"	"		1,200	1,200	10 00	
	Knight Bros., Co., Ltd., Burk's Falls	32	"	"	"	2	1,400	1,420	10 00	
	Simon Plewes, Creemore	33	"	"	"		500	500	5 00	
	Monarch Supply Co., Ltd., Toronto	34	"	"	"	21	750	960	10 00	
	Brampton Electric Light Co	35	"	"	"	33	1,925	2,255	25 00	
	Corporation of the Town of Milton	36	"	"	"	20	1,000	1,200	10 00	
	W. H. Summerfeldt & Sons, Sutton West	37	"	"	"		420	420	5 00	
	The Stark Telephone, Light and Power System Ltd., Toronto Junction	38	"	"	"	161	9,294	10,904	25 00	
	Penetanguishene and Midland Electric Street Railway, Light and Power Co., Ltd	39	"	"	"	16	1,900	2,060	25 00	
	Corporation of the Village of Tottenham	40	"	"	"		500	500	5 00	
	J. J. Gould, Uxbridge	41	"	"	"	12	1,200	1,320	10 00	
	Corporation of the Town of Thessalon	42	"	"	"	13	800	930	10 00	
	The Cataract Electric Co., Ltd	43	"	"	"	30	200	500	5 00	
	Corporation of the Town of East Toronto	44	"	"	"	32	600	920	10 00	
	Blind River Heat and Power Co., Ltd	45	"	"	"		1,800	1,800	10 00	
										1,035 00
Montreal	La Compagnie d'Eclairage Electrique de Terrebonne	1	C. I. R.,	Montreal	1907-1908	1	1,386	1,396	10 00	
	Corporation of the Town of Huntingdon	2	"	"	"		1,030	1,030	10 00	
	The Laurentian Water and Power Co., Ste. Agathe des Monts	3	"	"	"	2	1,000	1,020	10 00	
	Central Heat, Light and Power Co., Montreal	4	"	"	"	165	8,000	9,650	25 00	
	Saraguay Electric Light and Power Co., St. Laurent and Bordeaux	5	"	"	"		1,965	1,965	10 00	
	Gazette Printing Co., Montreal	6	"	"	"		800	800	10 00	
	St. Jérôme Power and Electric Light Co., Ltd	7	"	"	"	2	1,000	1,020	10 00	
	Montreal Light, Heat and Power Co	8	"	"	"	3,591	407,493	443,403	25 00	
	Valleyfield Electric Co., Ltd	9	"	"	"		3,100	3,100	25 00	
	Corporation of the Town of Westmount	10	"	"	"	150	17,000	18,500	25 00	
	John T. Ayers, Lachute	11	"	"	"		1,050	1,050	10 00	
	Corporation of the Town of Lachine	12	"	"	"	60	2,500	3,100	25 00	
	Beauharnois Electric Light Co	13	"	"	"		1,500	1,500	10 00	
	Joseph Cyr, St. Canut	14	"	"	"		406	406	5 00	
										210 00

STATEMENT showing the Electric Light Companies registered under the Electric Light Inspection Act, during the Year ended March 31, 1908—*Continued.*

Districts.	From whom Collected.	Serial No.	By whom Collected.	Certificate for Fiscal Year.	Number of Lamps.			Registration Fees.	Totals.
					Arc.	Incandescent.	Totals.		
								$ cts.	$ cts.
Quebec	H. Grandbois, St. Casimir	1	C. I. R., Quebec	1907-1908		400	400	5 00	
	La Compagnie Electrique de la Baie St. Paul	2	" "	"		550	550	10 00	
	La Compagnie Electrique et Hydraulique, Lorette	3	" "	"	1	1,125	1,135	10 00	
	Canadian Electric Light Co., Lévis	4	" "	"	29	8,000	8,290	25 00	
	Corporation of the Town of Fraserville	5	" "	"	36	2,000	2,360	25 00	
	La Compagnie des Eaux et de l'Electricité, Chicoutimi	6	" "	"		5,000	5,000	25 00	
	La Compagnie Electrique de St. George et de Beauce	7	" "	"		900	900	10 00	
	The Quebec, Jacques Cartier Electric Co., Quebec	8	" "	"	629	60,115	66,405	25 00	
	Chs. A. Julien, Pont Rouge	9	" "	"		400	400	5 00	
	Chs. A. Julien, St. Raymond	10	" "	"		750	750	10 00	
	La Compagnie Electrique du Bic	11	" "	"		200	200	5 00	
	Quebec Railway, Light and Power Co	12	" "	"	250	64,500	67,000	25 00	
	Montmagny Light and Pulp Co	13	" "	"		1,500	1,500	10 00	
	Labrador Electric and Pulp Co., Ltd., Chutes Nairn	14	" "	"		3,530	3,530	25 00	
	Le Crédit Municipal Canadien, Rimouski	15	" "	"		1,263	1,263	10 00	
	La Compagnie d'Electricité de Roberval	16	" "	"		1,800	1,800	10 00	
									235 00
Sherbrooke	J. B. Parker, Dixville	1	C. I. R., Sherbrooke	1907-1908		125	125	5 00	
	Brome Lake Electric Power Co., Waterloo	2	" "	"		1,900	1,900	10 00	
	J. A. Gaulin, Sawyerville	3	" "	"		235	235	5 00	
	La Compagnie d'Eclairage Electrique du Village de Mégantic, Lake Megantic	4	" "	"		1,200	1,200	10 00	
	Westbury Electric Light and Power System, Cookshire	5	" "	1907-1908		700	700	10 00	
	Corporation of the Village of Granby	6	" "	"	40	3,000	3,400	25 00	
	Richmond County Electric Co	7	" "	"		2,313	2,313	25 00	
	Corporation of the Town of Magog	8	" "	"		2,500	2,500	25 00	
	R. H. & G. H. Gibson, Danville	9	" "	"		800	800	10 00	
	Corporation of the Town of Windsor Mills	10	" "	"		2,000	2,000	10 00	
	Great Northern Lumber Co., Scotstown	11	" "	"		250	250	5 00	
	Corporation of the Town of Bromptonville	12	" "	"		810	810	10 00	
	Stanstead Electric Light Co	13	" "	"	20	1,400	1,600	10 00	
	Corporation of the Town of Coaticooke	14	" "	"	25	3,200	3,450	25 00	

	Sherbrooke Power, Light and Heat Co	15	" "	"	100	23,000	24,000	25 00		
	Eastern Townships Electric Co., North Hatley	16	" "	"	.....	1,800	1,800	10 00		
	La Compagnie Champoux, Disraeli	17	" "	"	.....	2,000	2,000	10 00		
	D. C. Horner & Son, West Shefford	18	" "	"	.....	160	160	5 00		
St. Hyacinthe	La Compagnie Electrique de Sorel	1	C. I. R., St. Hyacinthe	1907-1908	40	4,000	4,400	25 00	235 00	
	La Compagnie Electrique de Plessisville	2	" "	"	.....	3,660	3,660	25 00		
	La Compagnie du Gaz, Electricité & Pouvoir, St. Hyacinthe	3	" "	"	40	8,000	8,400	25 00		
	Corporation de la Ville de Drummondville	4	" "	"	.....	1,200	1,200	10 00		
	M. S. Connell & Sons, Strawbridge, East	5	" "	"	.....	250	250	5 00		
	Deslandes & Chevrette, Acton Vale	6	" "	"	.....	400	400	5 00		
	A. N. Dufresne, St. Cesaire	7	" "	"	.....	1,800	1,800	10 00		
	Nelson Buzzell, Cowansville	8	" "	"	.....	450	450	5 00		
	The Arthabaska Water and Power Co., Victoriaville	9	" "	"	.....	4,000	4,000	25 00		
	G. Poulin, Farnham	10	" "	"	.....	1,500	1,500	10 00		
	St. John's Electric Light Co	11	" "	"	13	4,000	4,130	25 00		
	St. John's Electric Light Co	12	" "	1906-1907	13	4,000	4,130	18 75	188 75	
Three Rivers	Laval Electric Co., Charlemagne	1	C. I. R., Joliette	1907-1908	.....	356	356	5 00		
	Laval Electric Co., L'Assomption	2	" "	"	.....	1,274	1,274	10 00		
	La Corporation de la Ville de Joliette	3	" "	"	50	2,000	2,500	10 00		
	Dion & Paradis, St. Roch de l'Achigan	4	" "	"	.....	500	500	5 00		
	Felix Robert & Co., St. Lin des Laurentides	5	" "	"	.....	380	380	5 00		
	St. Maurice Light and Power Co., Shawinigan Falls and Berthierville	1	C. I. R., Three Rivers	1907-1908	10	1,800	1,960	10 00		
	North Shore Power Co., Three Rivers	2	" "	"	97	6,500	7,470	25 00		
	L'Electrique de Grand'-Mere	3	" "	"	.....	800	800	10 00		
St. John	St. John Railway Co	1	C. I. R., St. John	1907-1908	600	33,000	39,000	25 00	80 00	
	Fredericton Gas Light Co	2	" "	"	35	4,333	4,683	25 00		
	City of Moncton Water and Light Department	3	" "	"	86	8,000	8,860	25 00		
	Corporation of the Town of Newcastle	4	" "	"	23	2,700	2,930	25 00		
	Corporation of the Town of Chatham	5	" "	"	6	2,000	2,060	25 00		
	Corporation of Campbellton, Electric Light Department	6	" "	"	45	1,750	2,200	25 00		
	St. Stephen Electric Co	7	" "	"	48	1,984	2,464	25 00		
	Woodstock Electric Light Co., Ltd	8	" "	"	11	1,900	2,010	10 00		
	Sussex Manufacturing Co., Ltd	9	" "	"	2	976	996	10 00		
	Kent Electric Co., Ltd., Richibucto	10	" "	"	.....	1,800	1,800	10 00		
	Sackville Electric Light & Telephone Co., Ltd	11	" "	"	.....	1,364	1,364	10 00		
	Bathurst Electric & Water Power Co	12	" "	"	2	1,500	1,520	10 00		
	Woodstock Railway Light & Power Co	13	" "	"	50	1,500	2,000	10 00		
	A. & R. Loggie, Loggieville	14	" "	"	.....	300	300	5 00		
	C. M. Sherwood, Centreville	15	" "	"	5	360	410	5 00		
	King Lumber Co., Ltd., Chipman	16	" "	"	1	300	310	5 00		
	Dorchester Electric Light & Power Co., Ltd	17	" "	"	6	400	460	5 00		
Halifax	Chambers' Electric Light & Power Co., Ltd., Truro	1	C. I. R., Halifax	1907-1008	2	8,500	8,520	25 00	255 00	
	Halifax Electric Tramway Co. Ltd	2	" "	"	362	42,877	46,497	25 00		
	Town of Annapolis Royal Electric Light Works	3	" "	"	.....	1,100	1,100	10 00		
	John Daley, Digby	4	" "	"	.....	800	800	10 00		

APPENDIX J—*Continued.*

STATEMENT showing the Electric Light Companies registered under the Electric Light Inspection Act, during the Year ended March 31, 1908.—*Continued.*

Districts.	From whom Collected.	Serial No.	By whom Collected.	Certificate for Fiscal Year.	Number of Lamps.			Registration Fees.	Totals.
					Arc.	Incandescent.	Totals.		
								$ cts.	$ cts.
Halifax	Windsor Electric Light & Power Co., Ltd	5	C. I. R., Halifax	1907–1908		3,000	3,000	25 00	
	Acadia Electric Light Co., Wolfville	6	" "	"		1,800	1,800	10 00	
	Yarmouth Street Railway Co., Ltd	7	" "	"		400	400	5 00	
	Logan & Co. Electric Light Works, Shubenacadie	8	" "	"		300	300	5 00	
	Milton Electric Light, Power & Manufacturing Co., Ltd	9	" "	"		487	487	5 00	
	Town of Bridgewater	10	" "	"		1,950	1,950	10 00	
	Canada Electric Co., Ltd., Amherst	11	" "	"	18	5,000	5,180	25 00	
	Dartmouth Gas, Electric Light, Heating & Power Co., Ltd	12	" "	"		1,900	1,900	10 00	
	Kentville Electric Light & Power Co., Ltd	13	" "	"	2	1,700	1,720	10 00	
	Lunenburg Gas Co., Ltd	14	" "	"		1,990	1,990	10 00	
	Oxford Electric Co., Ltd	15	" "	"		495	495	5 00	
	Edison Electric Light & Power Co. of Spring Hill	16	" "	"		1,850	1,850	10 00	
	Bridgetown Electric Light & Power Co., Ltd	17	" "	"		700	700	10 00	
	Bear River & Digby Electric Light, Heating & Power Co., Ltd.	18	" "	"		472	472	5 00	
	Water Commissioners of the Town of Mahone, Electric Light Department	19	" "	"		500	500	5 00	
	Town of Parrsboro Electric Light Works	20	" "	"		1,000	1,000	10 00	
	Town of Liverpool Electric Light Works	21	" "	"	25	1,800	2,050	25 00	
	Antigonish Electric Co	1	C. I. R., Pictou	1907–1908		1,300	1,300	10 00	
	Corporation of the Town of Pictou	2	" "	"	33	3,150	3,480	25 00	
	Inverness Railway & Coal Co	3	" "	"	8	620	700	10 00	
	Corporation of the Town of Glace Bay	4	" "	"	7	8,000	8,070	25 00	
	Sydney Mines Electric Co	5	" "	"	1	1,980	1,990	10 00	
	Cape Breton Electric Co., Ltd., Sydney	6	" "	"	73	16,886	17,616	25 00	
	New Glasgow Electric Co., Ltd., New Glasgow, Stellarton & Westville	7	" "	"	45	9,000	9,450	25 00	
	Acadia Coal Co., Ltd., Stellarton	8	" "	"	17	600	770	10 00	
									395 00
Charlottetown	Montague Electric Co., Ltd	1	C. I. R., Charlottetown	1907–1908		425	425	5 00	
	Charlottetown Light & Power Co., Ltd	2	" "	"	38	8,500	8,880	25 00	
	Summerside Electric Co., Ltd	3	" "	"	20	750	950	10 00	
									40 00

Winnipeg	Corporation of the City of Regina	1	C. I. R., Moose Jaw	1907-1908.	15	13,650	13,800	25 00		
	Corporation of the City of Moose Jaw	2	" "	"	55	6,500	7,050	25 00		
	The Municipality of the Town of Indian Head	3	" "	"	36	2,800	3,160	25 00		
	George Collison, Estevan	4	" "	"		750	750	10 00		
	The Corporation of the City of Prince Albert	5	" "	"		3,356	3,356	25 00		
	Weyburn Machine & Electric Light Co., Ltd	6	" "	"	8	1,300	1,380	25 00		
	Townsend & Hutt, Milestone	7	" "	"		160	160	5 00		
	The City of Saskatoon	8	" "	"	27	2,500	2,770	25 00		
	Board of Water & Light Commissioners, Fort William	1	C. I. R., Port Arthur	1907-1908.	60	10,000	10,600	25 00		
	Corporation of the Town of Port Arthur	2	" "	"	16	14,315	14,475	25 00		
	Winnipeg Electric Railway Co	1	C. I. R., Winnipeg	1907-1908.	137	122,383	123,753	25 00		
	Corporation of the Town of Neepawa	2	" "	"	15	2,685	2,835	25 00		
	Corporation of the Town of Carberry	3	" "	"	15	1,200	1,350	10 00		
	Brandon Electric Light Co., Ltd	4	" "	"	60	18,000	18,600	25 00		
	Central Electric Co., Ltd., Portage la Prairie	5	" "	"	13	3,750	3,880	25 00		
	Corporation of the Town of Kenora	6	" "	"	20	5,400	5,600	25 00		
	Corporation of the Town of Dauphin	7	" "	"	14	3,000	3,140	25 00		
	Rat Portage Lumber Co., Ltd., Rainy River	8	" "	"		50	50	5 00		
	Turtle Mountain Milling Co., Ltd., Boissevain	9	C.I.R., Winnipeg	1907-1908.		950	950	10 00		
	Selkirk Electric Light and Power Co., Ltd	10	" "	"		1,500	1,500	10 00		
	M. Vanalstine, Morden	11	" "	"		1,200	1,200	10 00		
	Minnedosa Electric Light Co	12	" "	"	6	1,600	1,660	10 00		
	Corporation of the Town of Carman	13	" "	"	1	1,400	1,410	10 00		
										430 00
Calgary	Calgary Water Power Co., Ltd	1	C.I.R., Calgary	1907-1808.	11	12,000	12,110	25 00		
	Western General Electric Co., Ltd., Red Deer	2	" "	"	17	1,306	1,476	10 00		
	Corporation of the City of Calgary	3	" "	"	98	9,000	9,980	25 00		
	City of Edmonton	4	" "	"	80	20,000	20,800	25 00		
	Lethbridge Electric Co., Ltd	5	" "	"	10	2,750	2,850	25 00		
	Macleod Electric Light & Power Co., Ltd	6	" "	"		1,100	1,100	10 00		
	Blindman River Electric Power Co., Ltd., Lacombe	7	" "	"	14	545	685	10 00		
	Fort Electric Co., Ltd, Fort Saskatchewan	8	" "	"	6	722	782	10 00		
										140 00
Vancouver	Corporation of the City of Kamloops	1	C.I.R., Vancouver	1907-1908.		3,700	3,700	25 00		
	West Kootenay Power & Light Co., Ltd., Rossland	2	" "	"	36	4,225	4,585	25 00		
	Crow's Nest Pass Electric Light & Power Co., Ltd., Fernie	3	" "	"	13	2,400	2,530	25 00		
	Corporation of the City of Nelson	4	" "	"	6	6,000	6,060	25 00		
	Corporation of the City of New Westminster	5	" "	"	118	11,500	12,680	25 00		
	British Columbia Electric Railway Co., Ltd., Vancouver	6	" "	"	744	139,187	146,627	25 00		
	British Columbia Electric Railway Co., Ltd., Steveston	7	" "	"		993	993	10 00		
	Corporation of the City of Revelstoke	8	" "	"	7	1,900	1,970	10 00		
	Cranbrook Electric Light Co., Ltd	9	" "	"	2	1,650	1,676	10 00		
	Consolidated Mining & Smelting Co., of Canada, Ltd., Trail	10	" "	"	9	1,160	1,190	10 00		
	Corporation of the City of Vernon	11	" "	"		600	600	10 00		
	Crow's Nest Pass Electric Light & Power Co., Ltd., Michel	12	" "	"		800	800	10 00		
	Greenwood City Waterworks Co	13	" "	"	8	1,760	1,780	10 00		
	Kootenay Electric Co., Ltd., Kaslo	14	" "	"		720	720	10 00		
	British Columbia Electric Railway Co., Ltd., Ladner	15	" "	"		1,094	1,094	10 00		

APPENDIX J—*Concluded.*

STATEMENT showing the Electric Light Companies registered under the Electric Light Inspection Act, during the Year ended March 31, 1908—*Concluded.*

Districts.	From whom Collected.	Serial No.	By whom Collected.	Certificate for Fiscal Year.	Number of Lamps.			Registration Fees.	Totals.
					Arc.	Incandescent.	Totals.		
								$ cts.	$ cts.
Vancouver	British Columbia Electric Railway Co., Ltd., North Vancouver	16	C. I. R., Vancouver	1907-1908.	32	1,681	2,001	25 00	
	Corporation of the City of Grand Forks	17	" "	"	12	1,600	1,720	10 00	
	Daly Reduction Co., Ltd., Hedley	18	" "	"	....	279	279	5 00	
	Sandon Water Works and Light Co.	19	" "	"	2	440	460	5 00	
	Cascade Water Power and Light Co., Ltd.	20	" "	"	.....	65	65	5 00	
	Ashcroft Water, Electric and Improvement Co	21	" "	"	.. .	450	450	5 00	
	Armstrong Light and Power Co	22	" "	"	1	540	550	10 00	
									305 00
Victoria	Nanaimo Electric Light, Power and Heating Co., Ltd	1	C. I. R., Victoria	1907-1908.	55	3,000	3,550	25 00	
	British Columbia Electric Railway Co., Ltd., Victoria	2	" "	"	53	57,459	57,989	25 00	
	Cumberland Electric Lighting Co., Ltd	3	" "	"	.. ..	1,600	1,600	10 00	
	Victoria Electric Co., Ltd.	4	" "	"	.....	300	300	5 00	
									65 00
Yukon	Dawson Electric Light and Power Co., Ltd.	1	C. I. R., Dawson	1907-1908.	.....	5,000	5,000	25 00	
	Yukon Electrical Co., Ltd., Whitehorse	2	" "	"	....	700	700	10 00	
									35 00
									5,631 25
	LESS—Refunds as per statement No. 16								15 00
									5,616 25

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

W. J. GERALD,
Deputy Minister.

APPENDIX K.

STATEMENT showing amount of Electrical Energy generated or produced for Export and for Consumption in Canada, under the authority of the Electricity and Fluid Exportation Act, for the five months ended March 31, 1908.

Name of Contractor.	Place of Business.	Units Generated for Export.	Units Generated for Consumption in Canada.	Total Output of Generating Station or other source.	Remarks.
Canadian Niagara Power Co.	Niagara Falls, Ont.	81,363,600	3,934,400	85,298,600	The electrical unit under the regulations is "1,000 watts passing for one hour" and commonly known as the kilowatt hour.
Electrical Development Co. of Ontario, Ltd.	"	1,660,300	32,589,900	34,250,200	
Maine and New Brunswick Electrical Power Co., Ltd	Aroostook Falls, N.B	253,400	.....	253,400	
Ontario Power Co. of Niagara Falls	Niagara Falls, Ont.	30,129,833	6,957,467	37,087,300	
	Total.	113,407,133	43,481,767	156,888,900	

The Electricity and Fluid Exportation Act came into operation on November 1, 1907.

W. J. GERALD.
Deputy Minister.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

APPENDIX L.

STATEMENT showing amount of Natural Gas produced for Export and for Consumption in Canada, under the authority of the Electricity and Fluid Exportation Act, for the five months ended March 31, 1908.

Nam of Contractor.	Place of Business.	Sold for Export.	Sold for Consumption in Canada.	Total Output of Generating Station or other source.	Remarks.
		Cub. ft.	Cub. ft.	Cub. ft.	
Provincial Natural Gas and Fuel Co. of Ontario, Ltd.	Bridgeburg, Ont..	289,245,000	296,730,000	585,975,000	

W. J. GERALD,
Deputy Minister.

INLAND REVENUE DEPARTMENT,
OTTAWA, June 11, 1908.

REPORT, RETURNS AND STATISTICS

OF THE

INLAND REVENUES

OF THE

DOMINION OF CANADA

FOR THE FISCAL YEAR ENDED MARCH 31

1908

PART III

ADULTERATION OF FOOD

PRINTED BY ORDER OF PARLIAMENT

OTTAWA
PRINTED BY C. H. PARMELEE, PRINTER TO THE KINGS' MOST EXCELLENT MAJESTY
1909

[No. 14—1909.]

CONTENTS.

	Page.
Deputy Minister's Report	5
Chief Analyst's Report	7
Official Analysts' Reports:—	
District of Montreal	11
District of Halifax	12
District of Ottawa	12
District of Toronto	12 and 13
District of British Columbia	13
Appendix 'A' Inspection of Spirituous Liquors	14
" 'B' " Almond Flavouring Extract	22
" 'C' " Ground Ginger	29
" 'D' " Ground Cinnamon	34
" 'E' " Fertilizers as Sold	41
" 'F' " Maple Sugar	54
" 'G' " Maple Syrup	73
" 'H' " Milk	92
" 'I' " Drugs	129
" 'J' " Condensed Milk	152
" 'K' " Strained Honey	176
" 'L' " Drugs	203
" 'M' " Lard	220
" 'N' " Honey	237
" 'O' " The Inspection of Domestic Wells	252
" 'P' " Canned Salmon	271

REPORT

OF THE

DEPUTY MINISTER OF INLAND REVENUE.

INSPECTION OF FOODS, DRUGS AND FERTILIZERS

To the Hon. Wm. Templeman,
Minister of Inland Revenue.

Sir,—I have the honour to submit herewith the reports of the Official Analysts of the Dominion for the year ending March 31, 1908.

The following is a summary statement of the number of samples analysed by the District Analysts for the period mentioned.

Description.	Genuine.	Doubtful.	Adulterated	Total.
Fertilizers	80	4	1	85
Milk	92	18	40	150
	172	22	41	235

The following statement shows the work done by the Chief Analyst and staff at Ottawa, for the year ending March 31, 1908.

Description.	Genuine.	Doubtful.	Adulterated.	Sold as Compound.	Total.
Spirituous Liquors	68				68
Almond Extracts	62	3			65
Ground Ginger	29	1			30
Ground Cinnamon	33				33
Fertilizers as sold	80	24	3		107
Maple Sugar	185	10	57	5	257
Maple Syrup	185	2	29	37	244
Milk	282	3	58		343
Chloral Hydrate	129				129
Amonium Bromide	128		2		130
Cream of Tartar	21	38	71		130
Condensed Milk	142				142
Strained Honey	219	4	16	14	253
Bismuth Subnitrate	55				55
Potass. Bromid	57				57
Phenacetin	84				84
Lard	129	7	2	2	140
Honey	135	3	2	1	141
Canned Salmon	90				90
Well-waters					128
					2,626

In addition to the above, 576 samples of miscellaneous character (detailed in the Report of the Chief Analyst) have been analysed, making the total number 3,202 samples, as against 2,201 samples for the preceding nine months, constituting the fiscal year 1906–7. It is to be remembered that, owing to the death of the Chief Analyst, a vacancy on the laboratory staff existed throughout the period 1907–8, but notwithstanding this fact the number of samples examined was relatively greater than during the preceding fiscal period.

The appointment of two assistants has placed the staff of the Chief Analyst on a fairly well equipped working basis, and even better results may be looked for in the future.

Reference has been made in previous reports as to the desirability of establishing tandards of purity for food, but notwithstanding the consideration given by the Chief Analyst to this subject, he does not as yet feel warranted in making definite recommendations.

I have the honour to be, sir,
Your obedient servant,

W. J. GERALD,
Deputy Minister.

Inland Revenue Department
Ottawa December 1, 1908.

REPORT OF CHIEF ANALYST.

Ottawa, September 16, 1908.

W. J. Gerald, Esq.,

Deputy Minister of Inland Revenue.

Sir,—I beg to report as follows upon the work of this laboratory, for the fiscal year ending March 31, 1908.

During this period, 2,626 samples were collected by our inspectors. The results of analysis of these are detailed in Bulletins 135 to 150, as follows :—

Number of Bulletin.	Subject.	Number of samples.
135	Spirituous Liquors	68
136	Almond Flavouring Extracts	65
137	Ground Ginger	30
138	Ground Cinnamon	33
139	Fertilizers as sold	107
140	Maple Sugar	257
141	Maple Syrup	244
142	Milk	343
143	Drugs	389
144	Condensed Milk	142
145	Strained Honey	253
146	Drugs	196
147	Lard	140
148	Honey	141
149	Well-waters	128
150	Canned Salmon	90
		2,626

In addition to the above there have been performed the following occasional analyses, during the year :—

	Samples.
Acetic Acid	13
Alcohol	2
Beer	40
Butter	2
Butterine	11
Baking Soda	2
Sugar	1
Coal	1
Caustic Soda	1
Candies	4
Cream of Tartar	14
Cider	2
Coffee	2
Carbolicene	1
Dextro-Maltine	1
Fusel Oil	4

Fertilizers	12
Jam	3
Lard	33
White Lead	1
Patent medicines	21
Maple Sugar	2
Maple Syrup	5
Milk	3
Morphine Sulphate	1
Oils	4
Olive oil	3
Spirits	7
Snuff	2
Spices	7
Tea	2
Vinegar	347
Water	14
Worts	1
Wood Alcohol	1
Wax Candles	6
Total	576

The total number of analyses made is therefore 3,202.

The following solutions have been prepared and supplied for the use of Excise Officers, in vinegar testings :—

	Normal Soda Solutions	63 Winchesters.
	Standard Phenolphthalein	14 bottles.
"	Standard Sulphuric Acid	4 "

A considerable amount of investigatory work has been carried out, both in connection with the subject matter arising out of regular collections, and also in special lines. Some references to this class of work, which necessarily entails much expenditure of time and labour, will be found in the Bulletins already mentioned. Other portions of it are reported, confidentially to yourself, or remain on file here, as a guide to researches to be carried out later.

The matter of establishing standards for various foods has been kept in view, and it is hoped that it will be possible to make definite recommendations, in the case of certain articles, in the near future.

The following notes upon the work recorded in the several Bulletins, is intended to present, in epitome, the principal conclusions reached :—

Bull. 135.—In 68 samples of Whiskey, taken at different bars throughout Saskatchewan and Alberta, the absence of methyl alcohol (wood spirits) was conclusively proved. 43 per cent of the samples obtained in Saskatchewan and 88 per cent of those obtained in Alberta, were found to be up to proof strength.

Bull. 136.—In 65 samples of Almond Flavouring Extracts, 61 samples proved to be quite free from hydrocyanic acid (prussic acid). Only 3 samples contained a measureable amount, and this was too minute to be in any way dangerous.

Bull. 137—Of 30 samples of Ground Ginger 29 were found to be genuine, or contained only traces of foreign starch. One sample contained 20 per cent of wheat starch.

Bull. 138.—Contains an examination of 33 samples of so-called Ground Cinnamon. A considerable amount of investigatory work was done with a view of establishing a difference between true Cinnamon and Cassia. These two varieties of spice run into

each other through so many gradations that it is nearly impossible to distinguish between them; and quite so, except in typical samples. Further work will be done upon this subject when opportunity offers.

Bull. 139.—This is a report upon 107 samples of Fertilizers, obtained on the market. Much difficulty has been found in making the present Fertillizer Act fulfil its intention of protecting the consumer against injustice and consequent serious injury. The main obstacles are *first*, securing the registration of all fertilizers offered for sale; *second*, the identification of the article as sold with the registered brand. A new Act has been drafted, and secured two readings in the present parliament, during last session. It is hoped that, when this becomes law, the difficulties just referred to will disappear.

Bull. 140 and 141.—These bulletins deal with the examination of 501 samples of Maple Sugar and Syrup, as found on the markets of Canada.

It has been found possible to establish fairly satisfactory standards for these products; and judged by such standards, the samples are classified as follows:—

	Sugar.	Syrup.	
Found genuine	185	185	
Sold as mixture	5	37	
Found doubtful	10	2	
" adulterated	57	20	
	257	244	
			501

Bull. 142.—This bulletin deals with the examination of 343 samples of Milk collected throughout Canada. It contains a systematic study of the work done by this laboratory on the subject of milk, since 1887. The following sentences, which sum up my conclusions, may be quoted.

"In the face of what has been recorded I am compelled to admit that while I "believe the standards for milk recommended by the late Chief Analyst to be reason- "able, and already attained throughout the greater part of Canada, it is impracticable "that they could be enforced by legal enactment over the whole of Canada. Without "going so far as to say that the cow must herself be consulted in the matter of quality "of milk, it is undeniable that the existence of many herds, whose average milk shows "less than 3 per cent of fat, and less than 11.5 per cent total solids, makes the uni- "versal adoption of a three and a half per cent standard impossible."

The standard referred to is:—

	Per cent.
Total solids	12
Butter fat	3·5
Non-fat solids	8·5

Bull. 143.—Contains a report upon certain drugs, as follows:—

	Samples.
Chloral Hydrate	129
Ammonium Bromide	129
Boracic Acid (sold as Am. Bro)	1
Potassii Tartras Acidus	92
Rochelle Salt (sold as Pot. Tart. Acid.)	1
Cream of Tartar	36
Bi-carb. Soda (sold as Cr. Tar.),	1
Total	389

All samples of chloral hydrate were found to be genuine. Ammonium bromide was found to be of very variable character, only 28·9 per cent of the samples reaching 97 per cent purity.

The question of fixing a standard for commercial cream of tartar of somewhat less rigour than that which the British Pharmacopœia requires for the drug (Potassii Tartras Acidus), is suggested; and will afford subject matter for later investigation.

Bull. 144 reports upon 142 samples of Condensed Milk. Many brands are sold as "Creams," although analysis show these brands to contain actually less butter fat than the ordinary condensed milk.

Suggestions having regard to the adoption of specific terminology and specific standards are made.

Bull. 145 is a report upon 253 samples of Strained Honey. Results may be summarized as follows:—

	Samples.
Genuine, and of normal character	188
" with high water content	31
Doubtful	4
Apparently adulterated	16
Sold as Compound	14
Total	253

The adulterations consisted in addition of glucose, or of cane sugar.

Bull. 146 reports upon the following drugs:—

	Samples.
Bismuth subnitrate	55
Potassium Bromide	57
Phenacetin	84
Total	196

All samples were found genuine.

Bull. 147 deals with 140 samples of Lard, collected throughout the Dominion. Two samples sold as genuine were found to contain cotton-seed stearin. Seven others were doubtfully pure lards.

Investigation of methods for the detection and estimation of beef stearin in lard is much needed, and will be proceeded with as leisure permits.

Bull. 148 is a further report upon Honey. 141 samples were collected in winter (December) at special suggestion of the Middlesex Bee-Keepers' Association.

	Samples.
Found genuine	135
" doubtful	3
" adulterated	2
Sold as compound	1
Total	141

Bull. 149, deals with an important but much neglected subject, the care of Domestic Wells. I have attempted to present the subject clearly and simply, with a view to its being dealt with by the municipalities interested. Although water is the most important of foods, yet being neither manufactured nor sold, in the ordinary sense of these words, it cannot be said to come strictly under the Adulteration of Food Act. Moreover anything like an effective supervision of public supplies would be too costly a business to be undertaken by this Department; while the great majority of wells are

private property, and unless cared for by their owners, are likely to become very dangerous for household supply. Typhoid fever has become characteristically a disease of the country; and every autumn sees numbers of city people returning from the country and developing typhoid fever, which had its origin in impure well water, used by them while spending their summers in the country. Even private wells may become a public menace. When situated near a school house, church or hall, a private well is frequently made available to the public. Private wells often supply factories, creameries, bakeries, breweries, &c. Most household wells are, for convenience of access, placed close to the house, and are thus, through ignorance and thoughtlessness, especially liable to contamination.

This bulletin contains a special report upon 128 wells examined in the towns of Weston, Richmond Hill and Oakville. The work recorded is rather to be considered in the light of an object lesson than as a thorough investigation of determinate water supplies. Unless the municipalities concerned take the matter up, it is not likely that this Department will feel justified in proceeding further with it.

Bull. 150 reports upon 90 samples of Canned Salmon. All were in good condition.

In addition to the above, 267 samples have been analysed by the District Analysts, during the year, details of which will be found in their reports, which accompany this.

I have the honour to be, sir,
Your obedient servant,

A. McGILL,
Chief Analyst.

Telephone, Main 2264,
112 St. François Xavier Street,
Montreal, June 17, 1908.

Dr. J. T. Donald,
(Official Analyst to the Dominion Government.)
Analysis, Assaying, Cement Testing, &c., Designing
Chemical Supervision of Industrial Plants.

Director of Laboratory:
R. H. D. Benn, F.C.S.

The Deputy Minister,
Inland Revenue Department,
Ottawa.

Sir,—I have the honour to report during the fiscal year ending March 31, 1908. I have analysed 26 samples of Fertilizers. Of these 23 were found to be genuine. Three were reported doubtful as they were not registered.

I have the honour to be,
Your obedient servant,

J. T. DONALD.

66 Bedford Row,

Halifax, N.S., June 22, 1908.

The Deputy Minister of Inland Revenue,
Ottawa.

Sir,—I have the honour to submit my annual report on samples of food, &c., analysed by me during the year ending March 31, 1908, as follows :—

Samples.	Adulterated.	Doubtful.	Genuine.	Total.
Fertilizers	—	3	25	28
Milk	11	13	51	75
Total				103

I have the honour to be, sir,
Your obedient servant,

MAYNARD BOWMAN.

Office of Public Analyst for the District of Kingston.

Ottawa, June 24, 1908.

W. J. Gerald, Esq.,
Deputy Minister of Inland Revenue,
Ottawa, Ont.

Sir,—I have the honour to lay before you my report on the samples submitted to me by your Department during the fiscal year ending March 31, 1908.

Fourteen commercial fertilizers were the only samples received during the year. Two of these were found not to come within the category of commercial fertilizers as they contained none or but traces of the three essential elements of plant food : nitrogen, phosphoric acid, and potash. One was found below guarantee in potash, and the others were found equal to guarantee.

I have the honour to be, sir,
Your obedient servant,

F. X. VALADE, M.D.,
Public Analyst.

Faculty of Applied Science and Engineering,
University of Toronto, Ont.
School of Practical Science,
Toronto, September 17, 1908.

W. J. Gerald, Esq.,
Deputy Minister of Inland Revenue.

Sir,—I have the honour to make the following report on the samples ananysed in my laboratory during the past year.

I have analysed 34 samples of fertilizers, with results as follows:—

	Samples.
Up to standard	22
Below "	4
Not registered	8
Total	34

I have the honour to be sir,
Your obedient servant,

W. H. ELLIS.

Office of the Public Analyst,
Victoria, B.C., June 22, 1908.

The Minister of Inland Revenue,
Ottawa.

Sir,—I have the honour to present a tabulated statement showing the general results of the examination of samples submitted to me by the Department during the year ending March 31, 1908.

Samples.	Watered.	Skimmed.	Partly Skimmed.	Low in Butter Fat.	Low in Total Solids.	Genuine	Adulterated.	Total.
Fertilizers	.....	.....	.....	.....	.....	15	0	15
Milk	15	1	13	3	2	41	.....	75

I have the honour to be, sir,
Your obedient servant,

Sd. C. J. FAGAN.

APPENDIX A.

BULLETIN No. 135—SPIRITUOUS LIQUOURS.

Ottawa, July 5, 1907.

W. J. Gerald, Esq.
Deputy Minister of Inland Revenue,
Ottawa.

Sir,—Consequent upon your letter (40602) of 27th December last, addressed to the late chief analyst, a collection of spirituous liquors was ordered to be made by Mr. Food Inspector Conklin, throughout the province of Saskatchewan. Twenty-two (22) samples were obtained, and the results of their examination are given in Table I. Special mention was made of Wolseley, Stockholm and Neudorf, as points of collection, and instructions furnished our inspector, made note of this; but the blocking of railways at the time (January) made it practically impossible to visit the two last named places.

Your further letter (41163) of the 30th January, authorized a similar collection throughout the province of Alberta. Forty-six (46) samples were obtained in February and March; and the results of their examination (except two samples which were broken in carriage) appear in Table II.

The immediate cause of this inspection, was the reported death of some persons who were thought to have been poisoned by the use of adulterated liquors. The samples which form the subject of this report, were obtained at public bars, &c.; and may therefore be taken to represent the average whiskey of the provinces in which they were sold. It is gratifying to find that no drugs, nor poisonous additions of any kind have been found in these liquors.

Particular attention has been given to the detection of methyl alcohol (wood spirit), since this is known to have poisonous properties. Its absence has been proved in every instance.

I beg to submit to you, for publication, as Bulletin 135, the accompanying records of work done upon these samples.

I have the honour to be, sir,
Your obedient servant,

A. McGILL,
Acting Chief Analyst.

Preliminary notes.

1. Canada has no generally accepted, or legally established spirit strength for alcoholic liquors. The British Foods Act, fixes 75 per cent proof, as the limit of reduction by water. On the basis of such a standard, the whiskey samples herein reported, may be classified as follows:—

	Province of Saskatchewan.	Alberta.
Samples within 2 degrees of 75 per cent proof..	4	30
" below 75 degrees proof.....	12	5
" above 75 " "	5	8
Total examined.	21	43

Percentage of the number examined which are found to be equal to, or above 75 per cent proof strength:

In Saskatchewan..... 43 per cent.
In Alberta..... 88 "

2. Preliminary testing for methyl alcohol has been done by the determination of the refractive index of a carefully prepared distillate at 20° C.; the spirit strength of the distillate being accurately known, any marked lowering of the refractive index, as compared with that of ethyl alcohol, of the same strength, indicates the necessity of a specific search for methyl alcohol.

Experiment has proved that working errors need not produce a deviation of more than 0·5 degree (Abbe Immersion refractometer scale); and that the presence of one per cent of methyl alcohol is certainly detected by the method, in a properly prepared distillate.

8-9 EDWARD VII., A. 1909

RECORD OF LIQUOR

TABLE I.—

Date of Collection.	Nature of Sample.	Number of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. —	Name and Address of Manufacturer or Furnisher.	Specific Gravity.
1907.					$ c.		
Jan. 17	Rye Whiskey...	25933	J. H. Kerr, Moosejaw.	3 pts.	1 50	Gooderham & Worts, Toronto.	·9666
" 17	"	25934	McReberts Bros., Moosejaw, Sask.	3 "	1 00	Gooderham & Worts, Toronto.	·9479
" 17	"	25935	Jas. Mundell, Moosejaw, Sask.	3 "	1 50	Gooderham & Worts, Toronto.	·9515
" 17	"	25936	E. C. Mathews, Moosejaw, Sask.	3 "	1 50	A. S. Mills, Moosejaw...	·9515
" 18	"	25937	J. E. Wheeler, Caron, Sask.	3 "	1 50	Gooderham & Worts, Toronto.	·9517
" 19	"	25938	Stevens & Wilson, Swift Current, Sask.	3 "	1 50	Gooderham & Worts, Toronto.	·9534
" 19	Rum.....	25939	G. W. Webster, Swift Current, Sask.	3 "	2 00	Brown & Wilson, Montreal.	·8732
" 23	Scotch Whiskey.	25940	Robt. Barry, Saskatoon, Sask.	3 "	2 00	John Robertson & Son, Dundee, Scotland.	·9373
" 23	" ..	25941	H. Wilson, Saskatoon, Sask.	3 "	1 75	Richard Belevier, Winnipeg.	·9345
" 24	Rye Whiskey...	25942	C. E. Mason & Son, Saskatoon, Sask.	3 "	1 50	Gooderham & Worts, Toronto.	·9593
" 24	"	25943	D. Kennedy, Saskatoon, Sask.	3 "	1 50	The Western Com. Co., Saskatoon.	·9578
" 25	"	25944	R. B. Fisher, Dundurn, Sask.	3 "	1 50	The Western Com. Co., Saskatoon.	·9557
" 30	"	25945	Wm. Harris, McLean, Assa. W.	3 "	1 25	Gooderham & Worts, Toronto.	·9575
" 30	"	25946	W. R. Matchett, Balgonie, Assa. W.	3 "	1 50	Gooderham & Worts, Toronto.	·9529
" 31	Scotch Whiskey.	25947	T. C. Allen, Qu'Appelle, Assa. E.	3 "	1 75	Kirk & Horner, Qu'Appelle.	·9241
" 31	Rye Whiskey...	25948	R. T. Lord, Sintaluta, Assa. E.	3 "	1 25	Gooderham & Worts, Toronto.	·9478
Feb. 1	Scotch Whiskey.	25949	Charles Newburry, Indian Head, Assa. E.	3 "	1 75	J. D. Robertson & Son, Dundee, Scotland.	·9373
" 1	Rye Whiskey...	25950	Barnes & Ghatsky, Grenfell, Assa.....	3 "	1 50	H. Walker & Son, Walkerville.	·9615
" 2	"	25951	T. W. Williamson, Walseby, Assa.	3 "	1 50	Gooderham & Worts, Toronto.	·9475
" 4	"	25952	T. G. Dixon Moosomin, Assa.	3 "	1 50	....	·9483
" 4	Scotch Whiskey.	25953	S. B. Anderson, Moosomin, Assa.	3 "	1 75	J. D. Robertson & Son, Dundee, Scotland.	·9400
" 4	Rye Whiskey...	25954	C. A. Waggoner, Whitewood, Assa.	3 "	1 25	E. J. Pelletier, Brandon..	·9520

* The British Sale of Food and Drugs Act, Amendment Act of 1879, Section 6, provides "That it shall be a good defence to prove that admixture with water has not reduced the spirit more than 25 degrees under proof for brandy, whiskey or rum." The numbers in this column show how far the samples

SESSIONAL PAPER No. 14

SAMPLES ANALYSED.

SASKATCHEWAN.

Results of Analysis.									Remarks.
Alcohol percentage.			*Variation from 75 p.c. Spirit Strength.	Examination for Methyl Alcohol.					
						Refraction.			
Weight.	Volume.	Proof Spirit.		Density.	Alcohol p. c.	Found.	Theory.	Difference.	
23·9	29·1	51·1	−23·9	·9471	35·95	77·1	77 0	+0·1	Genuine, with added water.
35·6	42·5	74·5	−0·5	·9401	39·75	81·2	81·2	0·0	Genuine.
33·8	40.5	71·0	−4·0	·9411	39·25	80·5	80·5	0·0	"
33·8	40·5	71·0	−4·0	·9439	37·72	78·7	78·8	−0·1	"
33·7	40·4	70·8	−4·2	·9343	42·62	84·1	83 9	+0·2	"
32·6	39·2	68·7	−6·3	·9481	35·45	76·3	76·3	0·0	"
69·5	76·5	134·0	+59·0	·9734	18·54	48·2	47·6	+0·6	"
41·2	48·6	85·2	+10·2	·9375	41·05	83·4	82·5	+0·9	"
42·5	50·6	87·7	+12·7	·9340	42·76	84·6	84·0	+0·6	"
29·0	35·1	61·4	−13·6	·9497	34·67	75·4	75·4	0·0	" with water added.
30·0	36·2	63·4	−11·6	·9576	30·11	69·7	69·2	+0·5	" "
31·2	37·6	65·8	−9·2	·9532	32·78	43·4	42·7	+0·7	" "
30·2	36·4	63·8	−11·2	·9563	30·84	41·4	40·6	+0·8	" "
32·9	39·5	69·3	−5·7	·9509	34·10	44·4	43·8	+0·6	"
38·7	46·0	80·5	+5·5	·9429	38·28	48·4	47·6	+0·8	"
35·6	42·5	74·5	−0·5	·9466	36·22	46·4	45·8	+0·6	"
41·2	48·6	85·2	+10·2	·9715	20·08	51·2	50·6	+0·6	"
27·6	33·4	58·5	−16·5	·9795	13·54	38 5	37·7	+0·8	" with water added.
35·8	42·7	74·9	−0·1	·9747	17·50	45·7	45·3	+0·4	"
35·4	42·3	74·1	−0·9	·9756	16·77	44·7	44·1	+0·6	"
39·8	47·1	82·6	+7·6	·9719	19·75	50·3	50 0	+0·3	"
33·5	40·2	70·5	−4·5	·9761	16·38	43·5	43·3	+0·2	"

examined depart from a standard of 25 under proof strength. Below this standard, marked by minus sign ; above this standard, marked by + sign.

8-9 EDWARD VII., A. 1909

RECORD OF LIQUOR

TABLE II—

Date of Collection.	Nature of Sample.	Number of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. —	Name and Address of Manufacturer or Furnisher.	Specific Gravity.
1907.					$ cts.		
Feb. 18	Rye whiskey....	25958	R. McDonald, Edmonton, Alb.	3 pts.	1 50	The Edmonton Wine and Spirit Co., Edmonton.	·9483
" 18	"	25959	Geo. McLaughlin, Edmonton, Alb.	3 "	1 50	H. Walker & Sons, Walkerville, Ont.	·9485
" 18	" ...	25960	Harry Finch, Edmonton, Alb.	3 "	1 50	Gooderham & Worts, Toronto, Ont.	·9501
" 18	"	25961	L. Gooderidge, Edmonton, Alb.	3 "	1 50	Corby's, Belleville, Ont.	·9478
" 18	"	25962	Mrs. B. Heter, Edmonton, Alb.	3 "	1 50	Gooderham & Worts, Toronto, Ont.	·9484
" 19	"	25963	Lannie Belanger, Edmonton, Alb.	3 "	1 50	Gooderham & Worts, Toronto, Ont.	·9482
" 19	"	25964	J. N. Pomerleau, Edmonton, Alb.	3 "	1 50	Not known..	·9405
" 19	"	25965	Castle Hotel Co., Edmonton, Alb.	3 "	1 50	H. Walkerville, Walkerville, Ont.	·9475
" 19	"	25966	Jas. McCausland, Edmonton, Alb.	3 "	1 50	Gooderham & Worts, Toronto, Ont.	·9486
" 19	"	25967	Wagott & Tilly, Edmonton, Alb.	3 "	1 50	Gooderham & Worts, To. ronto, Ont.	·9477
" 20	"	25968	John J. Mellon, Strathcona, Alb.	3 "	1 50	Gooderham & Worts, Toronto, Ont.	·9491
" 20	"	25969	E. McGuiness, Strathcona, Alb.	3 "	1 50	Hudson Bay Co., Edmonton.	·9480
" 21	" .. .	25970	Lucien Bordeau, St. Albert, Alb.	3 "	1 50	H. Walker & Sons, Walkerville, Ont.	·9515
" 21	"	25971	W. Asselin, St. Albert, Alb.	3 "	1 50	Gooderham & Worts, Toronto, Ont.	·9476
" 22	"	25972	T. A. Shipley, Fort Saskatchewan, Alb.	3 "	1 50	Not known.....	·9538
" 22	Scotch whiskey..	25973	Langhauser & Minz, Ft. Saskatchewan, Alb.	3 "	1 75	Strickland & Henderson, Fort Saskatchewan.	·9344
" 22	Rye whiskey....	25974	Cameron & O'Leary, Horse Hills, Alb.	3 "	1 50	J. B. Mercer, Edmonton.	·9485
" 23	Scotch whiskey..	25975	C. Gitzel, Spruce Grove, Alb.	3 "	2 00	J. B. Mercer, Edmonton.	·9322
" 23	Rye whiskey....	25976	Fred. Wader, Stony Plains, Alb.	3 "	1 50	H. Walker & Sons, Walkerville, Ont.	·9461
" 28	"	25977	L. Charlebeau, Calgary, Alb.	3 "	1 25	H. Walker & Sons, Walkerville, Ont.	·9407
" 28	"	25978	Cornell & Co., Calgary, Alb.	3 "	1 25	Gooderham & Worts, Toronto, Ont.	·9482
" 28	"	25879	Moody & Co., Calgary, Alb.	3 "	1 25	H. Walker & Sons, Wal. kerville, Ont.	·9462
" 28	" ...	25980	Stephens & Co., Calgary, Alta.	3 "	1 50	H. Walker & Sons, Walkerville, Ont.	·9473
Mar. 1	White Wheat Whiskey.	25981	The Calgary Wine and Spirit Co., Calgary.	2 qts.	1 50	The Calgary Wine and Spirit Co., Calgary.	·9556
" 5	Rye Whiskey...	25986	F. J. Dunn, Airdrie, Alta.	3 pts.	1 50	H. Walker & Sons, Walkerville, Ont.	.....
" 5	Scotch Whiskey.	25987	McKay & Lee, Crossfield, Alta.	3 "	1 50	The Calgary Wine and Spirit Co., Calgary.	·9385
" 6	Rye Whiskey...	25988	J. C. Brewester, Bowden, Alta.	3 "	1 25	H. Walker & Sons, Walkerville.	·9442

SESSIONAL PAPER No. 14

SAMPLES ANALYSED.

ALBERTA.

Results of Analysis.									Remarks.
Alcohol percentage.			Variation from 75 p.c. Spirit Strength.	Examination for Methyl Alcohol.					
						Refraction.			
Weight.	Volume.	Proof Spirit.		Density.	Alcohol.	Found.	Theory.	Difference.	
					p. c.				
35·4	42·3	74.1	−0·9	·9751	17·17	45·4	44·9	+0·5	Genuine.
35·3	42·2	73·9	−1·1	·9751	17·17	45·4	44·9	+0·5	"
34·5	41·3	72·4	−2·6	·9755	16·85	44·6	44·3	+0·3	"
35·6	42·5	74·5	−0·5	·9747	17·50	45·6	45·5	+0·1	"
35·3	42·2	73·9	−1·1	·9749	17·33	45·7	45·3	+0·4	"
35·4	42·3	74·1	−0·9	·9747	17·50	45·8	45·5	+0·3	"
39·6	46·9	82·2	+7·2	·9723	19·42	50·2	49·4	+0·8	"
35·8	42·7	74·9	−0·1	·9746	17·58	46·4	45·7	+0·7	"
35·2	42·1	73·7	−1·3	·9748	17·42	45·9	45·4	+0·5	"
35·7	42·6	74·7	−0·3	·9746	17·58	45·8	45·7	+0·1	"
35·0	41·8	73·3	−1·7	·9751	17·17	45·4	44·9	+0·5	"
35·5	42·4	74·3	−0·7	·9742	17·92	46·9	46·3	+0·6	"
33·8	40·5	71·0	−4·0	·9758	16·62	44·3	43·8	+0·5	"
35·7	42·6	74·7	−0·3	·9744	17·75	46·2	46·0	+0·2	"
32·4	38·9	68·2	−6·8	·9768	15·83	42·3	42·2	+0·1	"
42·6	50·2	87·9	+12·9	·9708	20·68	52·2	51·8	+0·4	"
35·3	42·2	73·9	−1·1	·9748	17·42	45·5	45·4	+0·1	"
43·6	51·2	89·8	+14·8	·9697	21·54	53·2	53·2	+0·0	"
36·5	43·5	76·2	+1·2	·9447	37·28	78·5	78·3	+0·2	"
39·5	46·8	82·0	+7·0	·9398	39·90	81·5	81·4	+0·1	"
35·4	42·3	74·1	−0·9	·9466	36·22	77·4	77·2	+0·2	"
36·4	43·4	76·0	+1·0	·9410	39·30	80·2	80·2	0·0	"
35·9	42·8	75·1	+0·1	·9499	37·16	78·0	78·2	−0·2	"
31·3	37·7	66·7	−8·3	·9559	31.06	70·3	70·5	−0·2	Genuine
.....	.....	.....	.....	.....	.....	.....	.....	.....	Sample broken in transit.
40·6	48·0	84·1	+9·1	·9380	40·80	82·2	82·2	0·0	Genuine.
37·6	44·7	78·4	+3·4	·9444	37·44	78·2	78·5	−0·3	"

RECORD OF LIQUOR

TABLE II.—

Date of Collection.	Nature of Sample.	Number of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. —	Name and Address of Manufacturer or Furnisher.	Specific Gravity.
1907.					$ c.		
Mar. 6	Rye Whiskey...	25989	Malcolm & Gladwin, Carstairs, Alta.	3 pts.	1 50	Gooderham & Worts, Toronto.	·9491
" 6	"	25990	T. E. Driscoll, Carstairs, Alta.	3 "	1 50	Gooderham & Worts, Toronto.	.....
" 6	"	25991	McIlgarhey Bros., Didsbury, Alta.	3 "	1 50	Gooderham & Worts, Toronto.	·9481
" 6	"	25992	W. Spenham, Penbold, Alta.	3 "	1 50	H. Walker & Sons, Walkerville.	·9482
" 7	"	25993	Bucham & Robertson, Innisfail, Alta.	3 "	1 50	H. Walker & Sons, Walkerville.	·9454
" 7	Scotch Whiskey.	25994	Brazier & Kenny, Red Deer, Alta.	3 "	1 75	Greenless Co., Scotland ..	·9356
" 7	Rye Whiskey...	25995	Fred Krause, Red Deer, Alta.	3 "	1 50	Gooderham & Worts, Toronto.	·9479
" 7	" ..	25996	G. B. Shore, Blackfalds, Alta.	3 "	1 50	S. Creighton, Lacombe, Alb.	·9485
" 8	"	25997	Boode & Johnson, Lacombe, Alta.	3 "	1 00	H. Walker & Sons, Walkerville.	·9480
" 8	"	25998	S. Creighton, Lacombe, Alta.	2 qts.	1 50	Gooderham & Worts, Toronto.	·9481
" 8	"	25999	Anderson & Dea, Ponoka, Alta.	3 pts.	1 25	H. Walker & Sons, Walkerville.	·9484
" 8	" ...	26000	Geo. Lambert, Ponoka, Alta.	3 "	1 50	S. Creighton, Lacombe, Alb.	·9489
" 8	Scotch Whiskey.	25601	J. H. Smith, Morningside, Alta.	3 "	1 75	S. Creighton, Lacombe, Alb.	·9375
" 12	Rum	25602	Jos. Preos, Morinville, Alta.	3 "	1 50	Hudson Bay Co., Edmonton.	·9114
" 12	Rye Whiskey..	25603	T. Paquette, Morinville, Alta.	3 "	1 50	Edmonton Wine and Spirit Co.	·9496
" 12	"	25604	Guertin & Hittinger, Morinville, Alta.	3 "	1 50	Hudson Bay Co., Edmonton.	·9486
" 13	" . ..	25605	D. McDonald, Legal, Alta	3 "	1 50	Hudson Bay Co., Edmonton.	·9475
" 18	" ...	25606	T. Gagnon, Athabaska Landing, Alta.	3 "	1 50	J. B. Mercer, Edmonton.	·9489
" 18	"	25607	Thos. B. Kirk, Athabaska Landing, Alta.	3 "	1 50	Gooderham & Worts, Toronto.	·9646

*The British Sale of Food and Drugs Act Amendment Act of 1875, Section 6, provides that it shall be a good defence to prove that admixture with water has not reduced the spirit more than 25 degrees under proof for brandy, whiskey or rum. The numbers in this column shew how far the samples examined

SAMPLES ANALYSED.

ALBERTA—*Concluded.*

Results of Analysis.									Remarks.
Alcohol percentage.			Variation from 75 p.c. Spirit Strength.	Examination for Methyl Alcohol.					
						Refraction.			
Weight.	Volume.	Proof Spirit.		Density.	Alcohol p.c.	Found.	Theory.	Difference.	
35·0	41·8	73·3	−1·7	·9479	35·55	76·4	76·6	−0·2	"
.....	.....	.....	.....	.....	.....	.....	.....	.....	Sample broken in transit.
35·5	42·4	74·3	−0·7	·9471	35·95	76·8	77·0	−0·2	Genuine.
35·4	42 3	74·1	−0·9	·9489	35·05	76·1	76·0	+0·1	"
36·9	43·9	77·0	+2·0	·9444	37·44	78·5	78·5	0·0	"
42·0	49·5	86·75	+11·7	·9375	41·05	82·4	82·5	−0·1	"
35·6	42·5	74.5	−0·5	·9376	41·00	82·1	82·3	−0·2	"
35·3	42·2	73·9	−1·1	·9447	37·28	78·0	78·3	−0·3	"
35·5	42·4	74·3	−0·7	·9313	44·05	85·1	85·3	−0·2	"
35·5	42·4	74·3	−0·7	·9317	43·86	85·0	85·1	−0·1	"
35·3	42·2	73·9	−1·1	·9493	34·86	75·5	75·7	−0·2	"
35·1	42·0	73·5	−1·5	·9492	34·90	75·5	75·7	−0.2	"
41·1	48·5	85·1	+10·1	·9411	39·25	80·7	80·5	+0·2	"
53·0	60·9	106·6	+31·6	·9121	52·64	92·2	92 0	+0·2	"
34·7	41·5	72·8	−2·2	·9490	35·00	75·5	75·9	−0·4	"
35·2	42·1	73·7	−1·3	·9469	36·06	76·9	77·1	−0·2	"
35·8	42·7	74·9	-0·1	·9459	36·61	77·6	77·6	0·0	"
35·1	42·0	73·5	−1·5	·9479	35·55	76·3	76·5	−0·2	"
25·4	30·9	54·2	−20·8	·9629	26·60	63·3	63·0	+0·3	" with added water.

depart from a standard of 25 under proof strength, Below this standard, marked by minus sign ; above this standard, marked by + sign.

APPENDIX B.

BULLETIN No. 136—ALMOND FLAVOURING EXTRACTS.

OTTAWA, July 10, 1907.

W. J. GERALD, Esq.,
Deputy Minister of Inland Revenue.

SIR,—I beg to submit a report upon sixty-five samples of Almond Flavouring Extracts, with accompanying note, and would respectfully suggest the publication of the whole, as Bulletin No. 136.

I have the honour to be, sir,
Your obedient servant,

A. McGILL,
Acting Chief Analyst.

ALMOND FLAVOURING EXTRACTS.

In consequence of some reported cases of apparent poisoning from the use of Almond Extracts, supposed to contain more than traces of hydrocyanic (prussic) acid, (L. 40850), a collection of sixty-five (65) samples of Essence of Bitter Almonds, sold for the purpose of flavouring pastry, icecream, &c., was made in April and May of this year. Five samples were purchased in each of the thirteen Inspectoral Districts.

These have been carefully examined for prussic acid, by Mr. Lemoine, of this Laboratory, and his results are given in the accompanying table.

I may explain that prussic acid is not an essential constituent of an almond flavouring extract, except in the sense that it is naturally produced by a ferment present in the almond seed, which acts on the glucoside amygdaline to produce benzaldehyde and prussic acid, together with glucose. The benzaldehyde is the essential component, so far as development of flavour is concerned. For culinary purposes, the prussic acid should be removed by special treatment.

In modern practice it is usual to substitute an artificial benzaldehyde, made from toluene, for the article produced as above, by fermentation of amygdaline. The artificial benzaldehyde is, (according to Squire's Companion to the British Pharmacopœia, 17th edition, p. 90) 'scarcely inferior as a flavouring agent, to the natural oil.' It has the advantage of being entirely free from prussic acid, and I cannot regard the employment of pure benzaldehyde in the preparation of almond flavouring essences, as fraudulent; although I consider it desirable that a distinction should be made between such an essence and one made from the almond kernel, by appending the descriptive word '*Artificial*' to the same.

Nitrobenzol (oil of mirbane) is sometimes used as a substitute for benzaldehyde in the preparation of artificial almond flavouring. Since this article is quite different in chemical character, from the natural flavour, its employment is to be regarded as an adulteration. Its odour is somewhat like that of benzaldehyde, but more pungent. Nitrobenzol has not been found in any of the samples now reported. Dyes have been found in nine samples. There can be no reason found for the use of dyes, in almond essence, except the gratification of a popular demand for colour. It is to be regretted that a false taste should exist in this regard. So far as wholesomeness is concerned, there is no ground for complaint, as regards the traces of colouring matter found.

Hydrocyanic acid (prussic acid) is entirely absent from sixty-one (61) of the sixty-five (65) samples now reported. In one of the remaining four samples, a mere trace was found, and in only three (3) was the quantity measurable. In these cases the

amount is too small to have any practical danger to the user, and, although its presence may be taken to be a guarantee of the natural character of the article, I think it undesirable that even traces should remain in the flavouring essence.

Total number of samples analysed	65
Number entirely free from prussic acid	61
" containing measurable amounts	3
" " trace only	1
" " dyes	9

EXPLANATORY NOTE.

Essences used for experimenting purposes were compounded according to the U.S Pharmacopœia as follows :—

Stock	Benzaldehyde	1 part, alcohol 80 parts, water to 100.
"	Nitrobenzol	" " "
"	Oil of Bitter Almonds	" " "

The methods followed in the above researches were those described by Leach, 'Food Inspection and Analysis, pages 749-51'; with the exception, as regards nitro-benzol that it was found easier to dip the test-tube in hot water instead of boiling the liquid on a naked flame. The appearance of a deep violet ring at the lower part of the tube was found to be a delicate test; three cubic centimetres of the essence of nitro-benzol giving an evident reaction. The two other prepared essences gave no reaction. Four cubic centimetres of the essence of nitro-benzol diluted to double quantity with an essence bought in the city also gave the reaction, the added essence having previously given no response to tests for nitro benzol.

The delicacy and accurateness of the silver cyanide test in the quantitative estimation of prussic acid was proved as follows. A few cubic centimetres of the distillate from a mixture of ferrocyanide of potassium and sulphuric acid were made up to 100ccs. and gave following results :—

1cc. required	2·2	$\frac{N}{10}$ silver solution; $\frac{1}{2}$ strength required	1·3
"	2·5	" "	1·2
"	2·4	" "	1·2
"	2·4	" "	1·2
25ccs. U.S.P. essence required			3·5
"		"	3·5
"		"	3·4
"		"	3·4

As 1cc. $\frac{N}{10}$ silver solution is equal to 0·0027 grmm. prussic acid, 3·5 × 0·0027 = 0·0094; 0·0094 × 4 = 0·038 grmm. per 100ccs. (1,680 minims).

The diluted hydrocyanic acid of the B.P. contains 2 per cent acid and is given at the dose of 2–6 minims = $\frac{1}{1\frac{1}{2}}$ of a grain or 0·0054 grmm. for the maximum dose. It is not therefore probable that the three samples of essence containing respectively 0·0054, 0·0081, 0·0081 grmm. per 100 minims could become injurious. But it is to be desired that the oil of bitter almonds used in the manufacture of these essences should be absolutely free from prussic acid.

ALP. LEMOINE.

July 8, 1907.

RECORD OF SAMPLES OF ALMOND FLAVOURING EXTRACT, ANALYSED BY THE LABORATORY OF THE INLAND REVENUE DEPARTMENT.

District of Nova Scotia—R. J. Waugh, Inspector.

Date of Collection.	Nature of Sample.	Number of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Results of Analysis. Nitro benzol.	Hydrocyanic Acid grms. per 100 minims.	Dyes.
1907.										
April 18	Almond Flavouring Extract.	27341	Brown Bros., Halifax	3 ozs.	45c.	Vendors		None.	0·0054	None.
" 18	" "	27342	T. F. Courtney & Co., Halifax	3 bots.	75c.	Church & Paul, London, Ont.	Labelled, Paul's Perfect Essences.	None.	None.	None.
" 19	" "	27343	I. Moser, Halifax	3 "	30c.	Robinson Manufacturing Co., Toronto, Ont.	Labelled, our R. F. Concentrated Ext. forflavouring.	None.	None.	None.
" 23	" "	27344	J. H. Barss, Wolfville, N.S	3 "	30c.	National Drug & Chemical Co., Halifax.	Soverign Brand	None.	0·0084	None.
" 26	" "	27345	J. J. Kinley, Lunenburg, N.S.	3 ozs.	45c.	J. J. Kinley, Lunenburg, N.S.		None.	0·0084	None.

District of Prince Edward Island—T. Moore, Inspector.

April 19	Almond Flavouring Extract.	31111	R. Tuplin Kensington	4 ozs.	40c.	Grey Manufacturing Co., Montreal.		None.	None.	None.
" 20	" "	31112	R. T. Holman, Ltd., Summerside.	3 "	30c.	Dearborn & Co., St. John		None.	None.	None.
" 20	" "	31113	F. W. Strong, Summerside	3 "	30c.	Tropical Extract Co., Toronto.		None.	None.	Present.
" 20	" "	31114	W. H. Pigott, Mount Stewart	4 "	40c.	Dearborn & Co., St. John		None.	None.	None.
" 20	" "	31115	A. A. McDonald Bros., Georgetown.	3 "	30c.	McLarren's, Halifax		None.	None.	None.

District of New Brunswick—J. C. Ferguson, Inspector.

April 16	Almond Flavouring Extract.	24359	Dearborn & Co., 95 Prince William street, St. John, N.B.	3 bots.	45c.	Dearborn & Co., St. John, N.B.	Pure Flavouring Extract..	None.	None.	None.
" 16	" " ..	24360	G. E. Barbour & Co., Ltd., 'North Wharf' St. John, N.B.	3 " .	54c.	G. E. Barbour Co., St. John, N.B.	Fine Flavouring Extract ..	None.	None.	None.
" 23	" " ..	24392	Susses Mercantile Co., Ltd., Main street, St. John, N.B.	3 " .	60c.	Susses Mercantile Co., St. John, N.B.	Pure Concentrated Extract	None.	None.	None.
May 9	" " ..	24393	Inches & Grimmer, Water street, St. Stephens, N.B.	3 " .	45c.	Pure Gold Manufacturing Co., Ltd., Toronto.	Pure Gold Flavouring Extract.	None.	None.	Present.
" 11	" " ..	24394	W. H. Vanwart, Queen street, Fredericton, N.B.	3 " .	40c.	" " " ..	" ..	None.	None.	Present.

District of Quebec—E. Beland, Inspector.

April 5	Almond Flavouring Extract.	26195	J. A. Chabot, 271 St. Joseph street.	3 bots.	75c.	Imperial Extract Co., New York.	.....	None.	None.	None.
" 22	" " ..	26248	Jos. Savard, 35 St. Jean street .	3 " .	75c.	Albert Dunn, Agent.....	.....	None.	None.	None.
" 23	" " ..	26249	E. Lafrance, 272 St. Jean street.	3 " .	75c.	" "	... .	None.	None.	None.
" 23	" " .	26250	Jas. Miller, 152 St. Jean street.	3 " .	75c.	" "	....	None.	None.	None.
" 23	" " ..	26251	Jas. Miller, 152 St Jean street.	3 " .	45c.	" "	....	None.	None.	None.

District of St. Hyacinthe—J. C. Rouleau, Inspector.

April 17	Almond Flavouring Extract.	593	McRea Bros., Richmond...	3 bots.	30c.	Robt. Creig Co., Ltd., Toronto, Ont.	....	None.	None.	None.
" 17	" "	594	W. S. Sampson. Windsor Mills.	3 "	30c.	Robt. Creig Co., Ltd., Toronto, Ont.	.....	None.	None.	None.
" 18	" "	595	Dr. J. P.H. Massicotte, Victoriaville.	3 "	30c.	F. M. Peltier, Victoriaville....	....	None.	None.	None.
" 20	Bitter Almond Flavouring Extract.	596	L. H. Olivier, Sherbrooke.....	3 "	75c.	Pure Gold Mfg. Co., Toronto, Ont.	....	None.	None.	Present.
" 24	Almond Flavouring Extract.	597	P. A. Galipeau, Farnham.....	3 "	25c.	Henri Jonas & Co., Montreal..	.....	None.	None.	None.

District of Montreal—J. J. Costigan, Inspector.

April 13	Almond Flavouring Extract.	32501	Henri Jonas & Co., St. Paul street, Montreal.	1¼ lb.	50c.	Vendor.....	....	None.	None.	None.
" 22	" "	32502	Colonial Fluid Beef and Specialty Co., Montreal.	3 bots.	30c.	"	....	None.	None.	None.
" 22	" "	32503	Lyon Silverman, Notre Dame street, Montreal.	3 "	35c.	"	....	None.	None.	None.
" 22	" "	32504	M. J. McKerley, 120 Park Ave., Montreal.	3 "	30c.	Hamilton Coffee and Spice Co..	....	None.	None.	None.
" 22	" "	32505	S. Carsley & Co., Limited, Notre Dame street, Montreal..	3 "	25c.	Imperial Extract Co., Toronto.	.. ..	None.	None.	None.

RECORD OF SAMPLES OF ALMOND FLAVOURING EXTRACTS, ANALYSED BY THE LABORATORY OF THE INLAND REVENUE DEPARTMENT—*Continued.*

District of Ottawa—E. Belisle, General Inspector.

Date of Collection.	Nature of Sample.	Number of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Results of Analysis. Nitro benzol.	Hydrocyanic Acid grms. per 100 minims.	Dyes.
1907.										
April 9	Almond Flavouring Extract.	32362	W. H. Dunkin, Cornwall	3 bots.	30c.	Imperial Extract Co., Toronto.		None.	None.	None.
May 7	" "	32240	Hull Medical Hall	9 ozs.	50c.	Vendor		None.	None.	None.
" 7	" "	32241	A. R. Farley, 178 Albert street, Hull, P.Q.	8 "	75c.	"		None.	None.	None.
" 7	" "	32242	J. Skinner & Son, Ottawa, Ont.	8 "	80c.	"		None.	None.	None.
April 15	" "	32377	Bryson, Graham & Co., Sparks street.	3 bots.	60c.	Pure Gold Mfg. Co., Toronto, Ont.		None.	None.	Present.

District of Kingston—Jas. Hogan, Inspector.

April 2	Almond Flavouring Extract.	31084	W. J. Nesbitt, Johnston street, Kingston.	3 ozs.	30c.	McLarens		None.	None.	None.
" 3	" "	31096	Willbridge & Clark, Front st., Belleville.	5 "	45c.	Davis & Lawrence, Montreal		None.	None.	None.
" 4	" "	32411	Adams Bros., Kent street, Lindsay.	3 "	30c.	Cormon & Eckert, London, Ont.		None.	None.	None.
" 4	" "	32416	White & Gillespie, George street Peterboro'.	3 "	30c.	T. E. Co., Toronto		None.	None.	None.
" 4	" "	32418	Mason Co., George street, Peterboro'.	3 "	30c.	A. C. & S. Co		None.	None.	None.

District of Toronto—H. J. Dagar, Inspector.

May	8	Almond Flavouring Extract.	33262	Spencer Smith, Toronto	3 bots.	45c.	Benson Mfg. Co., Toronto	Labelled 20th Century	None.	None.	None.
"	8	" "	33263	J. J. Burton, Toronto	3 "	38c.	Tropical Extract Co., Toronto	Labelled Oriental	None.	None.	Present.
"	9	" "	33264	W. E. Medland, Toronto	3 "	30c.	Dalton Bros., Toronto	Labelled Nonpareil	None.	None.	Present.
"	20	" "	33265	J. L. Brown, Hamilton	3 "	30c.	H. C. & S. Co., Hamilton		None.	None.	None.
"	20	" "	33266	Peebles, Hobson & Co., Hamilton.	3 "	75c.	—. Seely, Detroit and Windsor		None.	None.	None.

District of London—Thos. Kidd, Inspector.

April	17	Almond Flavouring Extract.	30304	Williams & Purcell, Seaforth	3 bots.	30c.	Imperial Extract Co., Toronto.		None.	None.	None.
"	18	" "	30306	J. W. Irwin, Clinton	3 "	30c.	Canada Spice & Grocery Co., London, Ont.		None.	None.	None.
"	19	" "	30310	Walsh Bros., Stratford	3 "	30c.	F. F. Dalley & Co., Hamilton, Ont.		None.	None.	None.
"	19	" "	30313	Gorman, Eckart & Co., London, Ont.	3 "	30c.	W. R. Coll, Mitchell		None.	None.	None.
"	23	" "	30320	Geo. A. Young, Chatham	3 "	30c.	Sheriffs, Toronto		None.	None.	None.

District of Manitoba—W. M. Conklin, Inspector.

May	15	Almond Flavouring Extract.	25801	T. Eaton & Co., Winnipeg	2½ ozs.	60c.	Codville, Georgesen & Co., Winnipeg.		None.	None.	None.
"	15	" "	25802	E. B. Nixon, Winnipeg	2½ "	75c.	McLaren		None.	None.	None.
"	15	" "	25803	J. Robinson & Co., Winnipeg	4 "	$1.05	F. F. Dalley & Co., Hamilton		None.	None.	None.
"	16	" "	25804	A. McDonald, Winnipeg	2½ "	75c.	McLaren		None.	Trace.	None.
	16	" "	25805	T. Hurtley & Co., Winnipeg	2½ "	75c.	Sheriff		None.	None.	None.

RECORD OF SAMPLES OF ALMOND FLAVOURING EXTRACT, ANALYSED BY THE LABORATORY OF THE INLAND REVENUE DEPARTMENT—*Concluded.*

District of Calgary—R. W. Fletcher, Inspector.

Date of Collection.	Nature of Sample.	Number of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Results of Analysis. Nitro benzol.	Hydrocyanic Acid grms. per 100 minims.	Dyes.
1907.										
May 9	Almond Flavouring Extract.	28761	A. Urquhart & Co., Lacombe...	3 bots.	90c.	.....	.....	None.	None.	None.
" 9	" " ..	28762	J. G. Pratt, Lacombe.....	3 "	75c.	Blue Ribbon Mfg. Co., Winnipeg.	.....	None.	None.	None.
" 11	" " ..	28763	L. Lambert, Edmonton.....	3 "	60c.	McLaren, Hamillon.....	.....	None.	None.	None.
" 11	" " ..	28764	Capital Mercantile Co., Edmonton.	3 "	60c.	Pure Gold Mfg. Co., Toronto..	.....	None.	None.	Present.
" 11	" " ..	28765	Hudson Bay Co., Edmonton...	3 "	50c.	Blue Ribbon Mfg. Co., Winnipeg.	.....	None.	None.	None.

District of British Columbia—E. B. Parkinson, Inspector.

April 16	Almond Flavouring Extract.	32027	H. J. Hutcherson, Ladner, B.C.	3 bots.	60c.	J. H. Todd & Sons, Victoria, B.C.	.....	None.	None.	Doubtful.
" 27	" " ..	32083	City Grocery, Granville Street, Vancouver.	3 "	75c.	McLaren, Hamilton	.....	None.	None.	None.
" 27	" " ..	32084	Empress Mfg. Co., Homer st. Vancouver.	3 "	50c.	Vendor.	'Empress Brand' bought at the factory.	None.	None.	Present.
" 27	" " ..	32085	The Star of India Tea Co., Granville Street, Vancouver.	3 "	60c.	"	'Puritan Brand'	None.	None.	None.
May 18	" " ..	32101	The H. A. Edgett Co., Hastings Street, Vancouver.	3 "	75c.	Seely, Detroit and Windsor ...	.....	None.	None.	None.

APPENDIX C.

BULLETIN No. 137—GROUND GINGER.

Ottawa, July 15, 1907.

W. J. Gerald, Esq.,
Deputy Minister of Inland Revenue.

Sir,—I have the honour to submit you a report upon thirty (30) samples of Ground Ginger. These were collected throughout the Dominion, in November, 1906, in consequence of information received (F. 92549) which led to the belief that adulterated ginger was to be found on the Canadian Market.

Analysis shews 29 of these samples to be genuine, while adulteration is not absolutely certain in the remaining sample.

Ginger was made the subject of examination in 1896, and again in 1904. A synopsis of results shows the following :—

	Total samples examined.	Percentage.		
		Genuine.	Adulterated.	Doubtful.
Bulletin 48 — 1896.....	98	64	26	8
Bulletin 95 — 1904.....	10	6	4	0
Present report, 1907.....	30	29	0	1

The usual adulteration of ginger consists in the substitution of cheaper materials (flour, etc.), or in the use of exhausted rhizomes, i.e. stock from which the valuable principles have been more or less completely removed by washing. The examinations now made have had regard to the detection of such adulteration.

It is gratifying to find that ground ginger is now so largely unadulterated.

Some results obtained by the successive employment of certain solvents, are put on record ; and may be useful in the event of our having to make a more intimate study of the properties of ginger at a future time.

I beg to recommend the publication of this report, as Bulletin No. 137.

I have the honour to be, sir,

Your obedient servant,

A. McGILL,
Acting Chief Analyst.

RECORD of Samples of Ground Ginger—analysed by

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Quantity.	Cost.	Name and Address of Manufacturer or Furnisher.
1906.			*District of Nova Scotia—R. J. Waugh, Inspector.*			
Nov. 5	Ground Ginger.....	27204	Dillon Bros., Sackville St., Halifax, N.S.	12 ozs.	21c..	Jno. P. Mott & Co., Halifax, N.S.
" 8	"	27213	Jno. Lynch & Sons, Windsor, N.S.	12 "	30c..	" " ..
			District of Prince Edward Island—T. Moore, Inspector.			
" 5	"	28327	Sinclair & Stewart	½ lb..	14c..	Schwartz & Son, Halifax, N.S.
			District of New Brunswick—J. C. Ferguson, Inspector.			
8	"	24287	G. E. Barbour Co., Ltd., North Wharf, St. John, N.B.	11½ 3 pkgs.	30c..	Vendors..... ....
" 14	"	24289	Puddington & Merritt, Charlotte St., St. John, N.B.	¾ lb.	30c..	Jno. P. Mott & Co., Halifax, N.S.
			District of Quebec—E. Beland, Inspector.			
" 13	"	26047	Elzear Turcotte, 74 Desfossés, Que.	1 lb.	40c..	R. Herron & Co., Montreal.
" 13	"	26050	T. A. Chabot, 271 St. Josephs, Que.	1 "	40c..	Whitehead & Turner ..
" 13	"	26052	Chas. Riverin, 55 Couronne, Que.	1 "	40c..	Ewing Co., Montreal..
" 13	...	26053	L. N. Bergeron, 70 Couronne, Que.	1 "	30c..	Not known.....
			District of St. Hyacinthe—J. C. Rouleau, Inspector.			
" 8	"	589	N. Mitchell & Co., Granby, Que.	1 lb.	35c..	Chaput fils et Cie, Montreal.
" 9	"	590	Paradis & Leclaire, Sherbrooke, Que.	3 pkgs.	30c .	Marrotte, Leblanc et Cie, Montreal.
			District of Montreal—J. J. Costigan, Inspector.			
" 2	"	31626	S. H. Ewing & Son, King St., Montreal.	1 lb.	30c..	Vendor .....
" 2	"	31630	J. J. Duffy & Co., St. Paul St., Montreal.	½ "	13c..	" .....
" 10	"	31632	Heron Leblanc Co., Ltd., St. Paul St., Montreal.	½ "	10c..	" .....
Dec. 12	"	31636	Theo. Lefebvre & Co., Gosford St., Montreal.	½ "	10c..	" .....
			District of Ottawa—A. E. Sanderson, Inspector.			
Nov. 13	Ground Ginger.. ...	29384	G. Stewart, 237 Bank St., Ottawa.	1 lb.	40c..	Corcoran Co., Wellington St., Ottawa.
" 14	"	29386	Geo. Thomas, 63 George St., Ottawa.	1 "	30c..	Major, Ottawa.....

the laboratory of the Inland Revenue Department.

Inspector's Report.	Results of Analysis,								Remarks.
	Moisture.	Volatile oil.	Fat.	Loss to Ethylic Ether after Petroleum Ether.	Loss to Alcohol after Ethylic Ether.	Loss to Water after Alcohol.	Cold Water Extraction (on dry substance).	Insoluble matter (on dry substance).	
	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	
Labelled strictly pure	8·28	.....	.....	.....	.....	.....	21·15	78·85	Genuine.
Labelled Jamaica Ginger, strictly pure.	8·32	.....	.....	.....	.....	.....	21·10	78 90	"
.....	7·72	.....	.....	.....	.....	.....	21·41	78·59	"
Labelled strictly pure Ground Ginger, Acorn Brand, Maritime Spice & Coffee Mills, St. John, N.B.	7·52	.....	.....	3·48 3·64	3 96 4·32	6·64 6·89	20·88	79·12	"
From wooden box in store.	7·22	.....	.....	.....	.....	.....	21·16	78·84	"
.....	7·70	.....	.....	.....	.....	.....	17·61	82·39	Doubtful. Many starch granules do not show cross with polarized light.
.....	7·48	.....	.....	.....	.....	.....	22·00	78·00	Genuine.
.....	7·70	.....	.....	.....	.....	.....	21·30	78·70	"
.....	7·86	.....	.....	.....	.....	.....	21·87	78·13	"
The box was marked pure Jamaica Ginger.	8·48	.....	.....	.....	.....	.....	20·78	79·22	
Box marked pure	6·92	.....	.....	.....	.....	.....	22·30	77·70	
Taken at factory from stock.	7·52	.....	.....	.....	.....	.....	21 62	78·38	"
" "	7·86	.....	.....	.....	.....	.....	22·18	77·82	"
Taken at factory from bulk stock, wholesale price, 20c. per lb.	7·72	.....	.....	.....	.....	.....	21·96	78·04	"
Sample collected at factory	7·10	.....	.....	.....	.....	.....	20·64	79·36	"
Taken from bulk	6·40	2·64	3·24	1·40	5 68	5·76			
	9·82	.....	.....	.....	.....	.....	24·50	75·50	"
"	5.76	2·76	1·06	2·26	1·83	5·88			
	9·00	.....	.....	.....	.....	.....	22·57	77 43	"

RECORD of Samples of Ground Ginger—analysed by

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Quantity.	Cost.	Name and Address of Manufacturer or Furnisher.
1906.			*District of Kingston—J. Hogan, Inspector.*			
" 5	Ground Ginger.....	31007	Chas. Sunders, Princess St., Kingston.	1 lb.	30c..	Hamilton Coffee and Spice Co.
" 5	"	31010	Anderson Bros., Princess St., Kingston.	1 "	40c..	Not known. .. ..
			District of Toronto—T. Kidd, Acting Inspector.			
" 14	"	30219	Peter Anderson, Guelph, Ont	½ lb.	20c..	McPherson, Glasco & Co., Hamilton.
19	"	30233	Geo. E. Reynolds, Beeton, Ont.	½ "	20c..	H. P. Eckart, Toronto.
" 20	"	30236	J. D. Elliott, Tottenham, Ont.	6 ozs.	30c..	Robert Gregg & Co., Toronto.
" 20	"	30238	William Hamel, Tottenham, Ont.	½ lb.	20c..	Perkins, Ince & Co., Toronto.
			District of London—T. Kidd, Inspector.			
" 3	"	30200	Wm. Anderson, Chatham, Ont.	½ "	20c.	A. M. Smith & Co., London, Ont.
" 8	"	30213	Chas. A. Nairn, Goderich, Ont.	½ "	20c .	Gorman & Eckart, London, Ont.
			District of Manitoba—Wm. M. Conklin, Inspector.			
" 8	"	25906	McLellan & English, Virden, Manitoba.	½ lb.	20c..	Todhunter & Mitchell, Toronto.
" 8	"	25910	D. Rice, Brandon, Man.....	½ "	20c..	Codville & Co., Winnipeg.
			District of British Columbia—E. B. Parkinson, Inspector.			
" 9	"	28187	The Empress Mfg. Co., Ltd., Vancouver, B.C.	3 tins	20c..	Vendor ... .
" 10	"	28194	F. Wright, Granville St., Vancouver, B.C.	¾ lb.	30c..	Todhunter & Mitchell, Toronto.
" 12	"	28199	Woodward Dep. Stores, Abbott St., Vancouver, B.C.	3 tins	30c..	Wm. Braid & Co., Vancouver, B.C.

the laboratory of the Inland Revenue Department.—*Concluded.*

Iuspector's Report.	Results of Anaysis.								Remarks.
	Moisture.	Volatile oil.	Fat.	Loss to Ethylic Ether after Petroleum Ether.	Loss to Alcohol after Ethylic Ether.	Loss to Water after Alcohol.	Cold Water Extraction (on dry substances).	Insoluble matter (on dry substances).	
	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	
.....	8·84	.....	...	.....	.....	....	23·80	76·20	Genuine.
	6·68	2·60	0·82	1·28	3·18	5·46			
....	6·62	2·38	1 26	2·02	3·52	2·70			
	9 60	.....	.....	.....	.....	.....	19·16	80·84	"
....	9·18	.... .	.....	.....	....	.....	24·33	75·67	"
	6·00	2 84	1·20	1 78	2·20	3·42			
....	8·96	.....	.....	.....	....	....	19·96	80·04	"
	8·46	1·56	0·72	1·34	2·14	3·70			
....	8·60	.....	.....	..	. ...	.....	24·63	75·37	"
	8 24	1·76	1·64	1·28	1·80	5·16			
....	8·98	.....	...	.....	.. ...	.. ...	24·25	75·75	"
	7·42	1·58	2·20	2·66	3·88	4·28			
... .	8 20	.....	.....	.....	.....	.....	23.37	76·63	"
	8·14	2·12	1 58	2·40	2·48	5·70			
.....	8 42	..	.....	.....	.....	.....	20·98	79·02	"
	6·64	3·04	0·80	2·04	2·18	3·62			
.....	7·96	...	... .	...	.....	.....	22·27	77·73	"
.....	7·48	.....	.. . .	..... .	.....	...	22·50	77·50	Genuine ; but a little foreign starch is present.
Purchased at the factory, 'Empress brand.' Empress brand Coffee, Spices and Extracts always reliable.	7 34	....	.....	.....	.....	.....	21·86	78·14	Genuine.
	7·60	2·18	2·34	2 50	5·22	4·94			
Bulk ginger	8·16	.... .	.....	...	.....	.....	22·32	77·68	"
Double superfine purity. Strength guaranteed first quality. The spice in this can is guaranteed to be of the finest quality, full strength and full weight. Put up expressly for vendors by Wm. Braid & Co.	6·14	....	.....	....	.....	.....	20·34	79·66	"

APPENDIX D.

BULLETIN No. 138--GROUND CINNAMON.

Ottawa, July 16th, 1907.

W. J. Gerald, Esq.,

Deputy Minister of Inland Revenue.

Sir,—I beg to hand you herewith a report upon thirty-three samples of *Ground Cinnamon*, collected in November and December, 1906.

Cinnamon and *Cassia* are the dry barks of trees which belong to the same botanical genus, *Cinnamomum*. Cinnamon is the bark of C. Zeylanicum, chiefly grown in Ceylon and the East Indies; Cassia is the bark of C. Cassia, chiefly grown in China and India. The former bark is thinner, lighter in colour and exists (commercially) in smaller rolls than Cassia bark. It is sufficiently easy to distinguish the two articles, in the unground state; and there is a considerable difference in price between whole cinnamon and whole cassia. The botanical elements of the two are, however, practically identical; and, in the finely ground state, it becomes a difficult, if not an impossible thing, to discriminate between them. The darker colour of Cassia is almost the only distinctive character that remains.

Whether cassia is inferior to cinnamon for flavouring purposes, in cookery, is an open question. The general impression is that cinnamon is preferable. Its higher price is doubtless due to this preference. At the same time it is certain that much, if not most, of the ground cinnamon of commerce, is really ground cassia.

Several grinders distinctly label their goods with the word *Cassia*; and it is probable that the same spicemen put on the market a higher priced article under the name *Cinnamon*; but of this I have no conclusive proof. It is however quite certain that the spice in question is known to most domestic users as *Cinnamon*; while the term *Cassia* conveys a very vague meaning, or no meaning whatever. Throughout Quebec the article is known as *Canelle*, which means cinnamon as distinguished from cassia, to which belongs the term *Casse*, seldom mentioned except as a drug.

Under these circumstances, it will be seen that a discrimination between cinnamon and cassia, as spices, is difficult to maintain. It is open to question how far we may take the darker colour of cassia, as evidence of its presence. A sample of cinnamon, ground from the bark, was taken as the standard of colour; and among thirty-three samples, of spice bought as cinnamon, only two (2) were found to come up to the prepared standard. One of these was plainly labelled *Cassia* on the package. The sample in question contains no foreign starch, or other addition, which might account for its light colour; so that, unless bleaching has been resorted to, we must infer that some samples of cassia are as light in colour as normal cinnamon.

The difficulty of distinguishing between cinnamon and cassia, in the ground state, is recognized by the Committee of Standards at Washington, as shown by the following definitions, proclaimed as legal for the United States in June, 1906:

Cinnamon is the dried bark of any species of the genus *Cinnamomum*, from which the outer layers may or may not have been removed.

True Cinnamon is the dried inner bark of *Cinnamomum Zeylanicum*, Breyne.

Cassia is the dried bark of various species of *Cinnamomum*, other than *Cinnamomum Zeylanicum*, from which the outer layers may or may not have been removed.

Cassia buds are the dried, immature fruit of species of *Cinnamomum.*

Ground Cinnamon, Ground Cassia, is a powder consisting of Cinnamon, Cassia or Cassia buds, or a mixture of these spices, and contains not more than six (6) per cent of total ash, and not more than two (2) per cent of sand.

So far as admixture of Cassia is concerned, I do not think that the present state of our knowledge justifies me in pronouncing it an adulteration of the spice known as Ground Cinnamon. This aspect of the matter must be left open for the present.

With a single exception, no other foreign matters have been found; and in this sample (No. 26,045) the amount of (wheat) starch is so small, as to be negligible.

As regards ash, the limit of six (6) per cent fixed by American Standard, is exceeded in six cases. I shall, however, await further experience with cinnamon, as occurring on the Canadian market, before feeling warranted in accepting the standards quoted.

The work on this subject has been mainly done by Mr. Lemoine of this Laboratory. An explanatory note by him accompanies the Table.

I beg to recommend the publication of this report as Bulletin No. 138.

I have the honour to be, sir,

Your obedient servant,

A. McGILL,

Acting Chief Analyst.

RECORD of Samples of Ground Cinnamon—Analysed by

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Quantity.	Cost.	Name and Address of Manufacturer or Funisher as given by the Vendor.
1906.			*District of Nova Scotia, R. J. Waugh, Inspector.*			
Nov. 5	Ground Cinnamon....	27205	Larder, Hubley & Co., Barrington st., Halifax.	12 oz.	30c..	A. M. Piper, Jarvis st., Toronto.
" 6	"	27212	W. H. Schwortz & Son, Halifax, N.S.	12 "	27c..	Vendors... . .....
			District of New Brunswick, J. C. Ferguson, Inspector.			
" 7	"	24284	Dearborn & Co., 93-95 Prince William st., St. John, N B.	3 pkgs.	30c..	Vendors .. ..
" 8	"	24285	G. E. Barbour Co., Limited, 11-12 North Wharf, St. John, N.B.	3 "	30c..	" .....
			District of Quebec, E. Beland, Inspector.			
" 12	"	26040	Geo. Montreuil, 91 St. Paul.	1 lb.	40c..	Not known... .....
" 12	"	26042	Francois Bourret, 143 St. Paul.	1 "	40c..	N. Rioux et Cie.....
" 12	"	26044	T. P. Guy, 152 St. Paul....	1 "	40c..	" " .....
" 12	"	26045	F. H. Allarie, 347 St. Paul.	1 "	40c..	Not known..... ... ..
			District of St. Hyacinthe, J. C. Rouleau, Inspector.			
" 7	"	583	Godreau & Stevens, St. Jean.	1½ lb.	50c..	Not known. .....
" 9	"	584	H. F. Barlow, Magog.....	3 pkgs.	30c..	Lockerby Bros., Ltd., Montreal.
" 13	"	585	A. C. Trempe, Sorel....	1 lb.	40c..	Not known..... .....
			District of Montreal—J. J. Costigan, Inspector.			
" 2	"	31625	S. H. Ewing & Son, King st., Montreal.	1½ lbs.	15c..	Vendors..... ....
" 2	" . .	31628	J. J. Duffy & Co., St. Paul st., Montreal.	1½ "	10c..	" .. ..
Dec. 12	"	31635	Theo. Lefebvre & Co., Gosford st., Montreal.	½ "	10c..	" ... .
" 12	"	31638	J. V. Boudrias, Notre Dame st., Montreal.	½ "	9c..	" .....
			District of Ottawa—A. E. Sanderson, Inspector.			
Nov. 13	"	29382	G. Stewart, 237 Bank st., Ottawa.	1 lb.	40c..	Corcoran & Co., Wellington St., Ottawa.
" 14	"	29388	Geo. Thomas, 63 George st., Ottawa.	1 "	30c..	Major, Ottawa.....
" 15	"	29397	A. Boivin, 80 Queen st., Ottawa.	1 "	35c..	G. J. White, Ottawa..
			District of Kingston—J. Hogan, Inspector			
" 5	"	31005	J. Cullen, Princess st., Kingston.	1 lb.	40c..	Not known..... .....
" 6	"	31014	James McCulla, Montreal st., Kingston.	1 "	50c..	Pure Gold, Toronto...
" 6	"	31016	P. A. Haffner, Montreal st., Kingston.	1 "	30c..	Robertson & Nicolle..

the Laboratory of the Inland Revenue Department.

Inspector's Report.	Results of Analysis.			Appearance under Microscope.	Remarks.
	Ash.				
	Soluble.	Insoluble.	Total.		
Sample taken from bulk..	1·15	1·55	2·70	No foreign tissues.	
Sample taken from box about to be shipped from factory.	0·80	2·75	3·55	" " .	
Labelled absolutely pure Cinnamon. We guarantee the contents of this package.	1·90	3·55	5·45	No foreign tissues.	
Labelled strictly pure. Acorn brand. Maritime Spice and Coffee Mills, &c.	0·5	2·85	3·35	" " .	
....	0·60	4·75	5·35	No foreign tissues.	
....	0·60	2·00	2·60	" " .	
....	0·70	2·00	2·70	" " .	
....	1·00	4·50	5·50	Contains foreign starch in small amount.	
Taken out of a 10 lb. drawer on shelf.	0·85	6·65	7·50	No foreign tissues.	Ash is too high percentage
Box marked pure ground Cassia.	0·65	4·20	4·85	" " .	Plainly labelled as Cassia.
Taken out of a 10 lb. drawer on shelf.	1·85	5·40	7·25	" " .	Ash is too high percentage
Taken at factory from stock...	0·85	6·00	6·85	No foreign tissues.	Ash percentage too high.
" " ..	0·85	3·60	4·45	" " .	
Sample collected at factory....	0·95	6·25	7·20	" " .	Ash too high.
" "	0·75	5·85	6·60	" " .	
Taken from bulk	1·00	2·60	3·60	No foreign tissues.	
"	1·11	3·15	4·26	" " .	
"	1·00	3·40	4·40	" " .	
. ...	0·95	5·30	6·35	No foreign tissues.	Ash too high.
....	0·95	3·45	4·40	" "	
.. ..	0·85	3·55	4·10	" " .	

RECORD of Samples of Ground Cinnamon—Analysed by

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Quantity.	Cost.	Name and Address of Manufacturer or Furnisher as given by the Vendor.
1906.						
			District of Toronto—T. Kidd, Acting Inspector.			
Nov. 14	" .. .	30221	Benson Bros., Guelph, Ont.	½ lb.	25c..	Todhunter & Mitchell, Toronto.
" 15	"	30226	J. F. Moorish, 237 Yonge st., Toronto.	½ "	25c..	" " ..
" 19	"	30232	Kidd & Co., Athlone, Adgala, Simcoe Co.	6 ozs.	15c..	F. F. Dalley & Co., Hamilton.
			District of London, T. Kidd, Inspector.			
Nov. 2.	Ground Cinnamon	30197	Geo. H. Nairen, Windsor, Ont.	¾ lb.	30c..	Canada Spice and Grocery Co., London Ont.
" 7.	"	30209	Cardino Bros., Seaforth, Ont.	½ "	20c..	A. M. Smith & Co, London, Ont.
" 8.	"	30215	Richard Smith, Seaforth, Ont.	½ "	20c..	Todhunter & Mitchell, Toronto.
			District of Manitoba, W. M. Conklin, Inspector.			
Nov. 8.	Ground Cinnamon	25905	Murdoch & Wilson, Virden	½ lb.	25c..	Not known..... .....
" 8.	"	25908	Wm. Muir, Brandon.....	½ "	20c..	Hamilton Coffee and Spice Co.
" 9.	"	25912	The T. A. Garland Co., Portage la Prairie.	½ "	20c..	Eby, Blain & Co., Toronto.
			District of British Columbia, E. B. Parkinson, Inspector.			
Nov. 9.	Ground Cinnamon	28186	The Empress Manufacturing Co., Ltd., Vancouver, B.C.	3 tins,	20c..	Vendors.....
" 10.	"	28192	H. A. Howell, Granville St., Vancouver, B.C.	¾ lb.	60c..	The Pioneer Coffee and Spice Mills, Victoria, B.C.
Nov. 12	Ground Cinnamon	28197	Hudson's Bay Co., Wholesale, Water St., Vancouver, B.C.	3 tins,	20c..	Wm. Braid & Co., Vancouver, B.C.

NOTE.—In examining these samples microscopically an endeavour was made to distinguish Cinnamon from Cassia by certain botanical characters supposed to be peculiar to each; but no absolutely conclusive judgment could be rendered on the subject, the aforesaid characters being of insufficient constancy.

JULY 13, 1907.

the Laboratory of the Inland Revenue Department—*Concluded.*

Inspector's Report.	Results of Analysis.			Appearance under Microscope.	Remarks.
	Ash.				
	Soluble.	In-soluble.	Total.		
....	0·90	2·25	3·15	No foreign tissues.	
....	0·75	2·00	2·75	" " .	
Branded pure..	0·75	3·15	3·90	" " .	Plainly labelled 'Cassia.
randed Pure spice.....	1·00	3·15	4·15	No foreign tissues.	Plainly labelled 'Cassia.'
!	0·75	2·50	3·25	" ..	
.....	0·80	2·25	3·05	" ..	
....	2·15	3·25	5·40	No foreign tissues.	
... .	0·60	2·15	2·75	" ..	
.....	0·85	2·65	3·50	" ..	
I chased at the factory, Empress brand; Empress brand offee, spices and extracts lways reliable.	0·80	1·60	2·40	No foreign tissues.	
E k cinnamon	0·85	2·55	3·40	" ..	
I erial brand, milled by the w process, from the finest lected stock. Packed exessly for the best family ade. Full strength, full ight and finest quality. lected stock, put up exessly for Hudsan Bay Co., ancouver.	1·10	2·80	3·90	" . ..	

As to colour, a standard was prepared from a sample of the best obtainable cinnamon bark, and the opinions expressed have reference to this, as the normal colour for cinnamon.

ALP. LEMOINE.

APPENDIX E.

BULLETIN No. 139—FERTILIZERS AS SOLD 1907.

Ottawa, July 25, 1907.

W. J. Gerald, Esq.,
Deputy Minister of Inland Revenue.

Sir,—I have the honour to submit a report upon 107 samples of Fertilizers, purchased by our own Inspectors, and submitted to analysis for the purpose of ascertaining how far the articles sold are in conformity with the guarantee of the manufacturer.

Great difficulty has always been found in identifying with certainty the sample sold, with the corresponding article as guaranteed. The retail vendor is frequently ignorant of the registered name; and he is satisfied to sell as 'Ground Bone' an article which may be registered as 'Bone Flour,' 'Bone Meal,' 'Fine Ground Bone' with or without other distinguishing words. It is evident that without satisfactory proof of identity, it becomes impossible to speak with assurance of the conformity of the sample to a standard. The following classification of the samples now reported, is offered subject to limitations just mentioned.

Fully identified and up to guarantee	62 samples
Doubtfully identified and up to guarantee	18 "
" " and below "	3 "
Apparently not registered	24 "
	107

The samples classified as 'below guarantee,' are the following:—

No. 30371—Bone Meal, manufactured by W. Harris & Co., Toronto.

The sample in question was obtained at the factory, and shows a value of $24.30 as compared with $33.69 shown (on same scale) by the sample registered. It is noteworthy, however, that no explicit guarantee accompanied either of these samples; and comparison can only be made with the Standard deposited with the Department, as required by the Fertilizers Act. It is no unusual thing for a standard sample to possess a value greatly above the minimum value guaranteed by the manufacturer; and to require every sample sold to reach the value possessed by the manufacturer's sample deposited, would result in condemnation of a very large percentage of all fertilizers sold. Nor would it be just to the manufacturer, who sells on the basis of a plainly printed guarantee, which may be considerably below actual value, and all the purchaser has any right to do, is to require him to live up to this guarantee. The fault, in the present case, is the selling without such explicit guarantee; a fault, however, which cannot be held to justify us in substituting for such guarantee, the standard sample deposited here, and requiring the manufacturer to live up to such standard. The difficulty met here arises out of imperfections in our Fertilizer Act; and it would not, I conceive, be just to press the case against the manufacturer of No. 30371.

No. 32446—High Grade Potash—American Agricultural & Chemical Co., Buffalo.

This brand is guaranteed to contain 10 per cent of potash. The sample analysed contained only 4·44 per cent. The standard sample deposited here contained 10·34 per cent of potash. This sample was registered as *High Grade Potash Compound*, No. 1946. Sample 32446 is sold as *High Grade Potash*, without the word 'Compound.' The name of the manufacturer, would probably be held to sufficiently identify the brand, as sold, with the brand, as registered; but as this is only *probable*, I am inclined to use this case rather as an argument for improving our machinery of identification, than as a case for prosecution.

No. 29521—Thomas Phosphate Powder—The Anglo-Canadian Chemical Co., St. John, N.B.—Compare with standard No. 1961.

Nothing can be clearer than that efficient fertilizer inspection is only possible when assured identification of every sample sold makes reference to, and comparison with a registered standard easy and certain. This involves the affixing of a tag or label to every package sold. Such tag or label should carry a printed guarantee, together with the name of the brand, and of the manufacturer. It would further simplify identification if each brand were designated by a registered number.

There seems no reason why tags or labels of the kind described, should not be furnished by the Inland Revenue Department to manufacturers of fertilizers, on registration, and at a fixed price. The income so derived would constitute a fund to meet the expenses of carrying out the Fertilizer Act. Not only would the question of identification be solved in this way, but the other difficulty of knowing whether a fertilizer were registered or not, would be met at the same time.

The following list comprises those brands of fertilizers purchased by our Inspectors, which do not appear to be registered as required by the Act.

No.	Name.	Manufacturer.	Vendor.
487	Earliana General Fertilizer	E. St. Jacques	Pharmacie St. Hyacinthe.
27374	Orchard Brand	Pidgeon Fert. Co., Windsor, N.S.	Capt. C. O. Allen, Kentville, N. S.
29522	Colombian Potato	The Col. Mortimer Co., New York.	Geo. F. Baird Co., Perth, N.B.
30373	Bone Dust	Amer. Agric. Co., Buffalo, N. Y.	J. A. Bruce, Hamilton.
30375	Blood Bone and Tankage	Can. Packing Co., London	Same.
32087	Bone Meal	Sylvester Feed Co., Victoria, B.C.	Wm. Rennie Co., Victoria, B.C.
32250	Market Gardeners Special Fertilizer	Nichols Chem. Co., Capleton, P.Q.	Kenneth McDonald, Ottawa.
32440	Land Rock	R. C. Mosher, N.B.	Chase Bros., Colborne. } is not fertilizer under the Act.
32443	Lawn Fertilizer	W. A. Freeman, Hamilton	G. S. Thompson, Cobourg.
32445	Plaster	Not known	E. A. Duncan, Cobourg. } is not fertilizer under the Act.
32513	Eureka	Fertilizer Co., Buckingham	R. J. Latimer, Montreal.
33221	Lawn Fertilizer	W. A. Freeman, Hamilton	S. L. Taylor, Brampton.
33267	Lawn Fertilizer	Wm. Rennie Co., Toronto	Same.
33268	Farm and Garden	" "	"
33269	Freeman's	W. A. Freeman, Hamilton	Steele Briggs & Co., Toronto.
33271	Tankage	Wm. Davies & Co., Toronto	Same.
33272	"	Park Blackwell Co., Toronto	"
33273	General	Western Fertilizer Co., Toronto	"
33274	Bone and Potash	" "	"
33275	Tankage Fertilizer	Fowlers Can. Co., Hamilton	"
33276	Flower Food Fertilizer	W. A. Freeman, Hamilton	Steele Briggs Co., Hamilton.
33277	Plant Food	W. M. Rennie, Toronto	C. Stock & Son, Brampton.
33279	Bone and Potash Fertilizer	Western Fertilizer Co., Toronto	Same (like 33274)
33280	General Fertilizer	" "	" (like 33273)

The 24 samples in question appear to represent 22 distinct brands. Of this number, two (Nos. 32440 and 32445) are not fertilizers, under the Act, since they do not contain phosphoric acid, nitrogen or potash. It is possible that some of these samples may be registered brands, but sold under names which do not suffice for their certain identification. This inference seems justified by the fact that several of the manufacturers named, have registered one or more brands, and are not likely to have, willingly, put unregistered brands on the market.

In the cases of samples 33273 and 33274 (also 33279 and 33280, which appear to be the same brands), it is worthy of remark that articles of very low value indeed are put on the market as chemical fertilizers. This fact, together with the fact of their non-registration, would appear to be sufficient ground for restrictive legal action.

Finally, I would respectfully draw your attention to the need of revising and improving our Fertilizer Act; so as to make it truly efficient in protecting the agricultural interests of Canada; and would recommend the publication of this report, with accompanying tables, as Bulletin No. 139.

I have the honour to be, sir,
Your obedient servant,

A. McGILL,
Acting Chief Analyst.

RECORD OF SAMPLES OF

Date of Collection.	Designation.	No. of Sample.	Name and Address of Manufacturer.	Name and Address of Vendor.	Identified with Standard.
1897.			*District of Nova Scotia.—R. J. Waugh, Inspector.*		
May 14	Victor Guano.....	27366	Provincial Chemical Co., St. John, N.B.	J. H. Longmire & Sons, Bridgetown, N. S.....	1986..
" 14	Potato Fertilizer.....	27367	Provincial Chemical Co., St. John, N.B.	J. H. Longmire & Sons, Bridgetown, N.S.....	1985..
" 14	Potato Manure.....	27368	Swift Lowell Fertilizer Co., Boston, Mass.	N. E. Chute, Bridgetown, N.S	1956..
" 14	Animal Brand	27369	Swift Lowell Fertilizer Co., Boston, Mass.	N. E. Chute, Bridgetown, N.S.....	1955..
" 15	XXX Fish and Potash Brand.	27370	Russia Cement Co., Glocester, Mass.	G. N. Ray, Middletown, N.S.....	1893..
" 15	Market Garden and Potato Brand.	27371	Russia Cement Co., Glocester, Mass.	G. N. Ray, Middletown, N.S	1894..
" 16	Six per cent Fertilizer...	27372	Bowker, Boston, Mass.	G. F. Roy, Kentville, N.S.....	1922..
" 16	Potato Manure.....	27373	Swift's Lowell Fertilizer Co., Boston. Mass.	G. F. Roy, Kentville, N.S.....	1956..
" 16	Orchard Brand	27374	Pidgeon Fertilizer Co., Windsor, N.S.	Capt. C. O. Allen, Kentville, N.S.....	.....
" 17	Stockbridge Manure....	27375	Bowker Fertilizer Co., Boston, Mass.	F. W. Woodman, Wolfville, N.S..... .. .	1930..
" 17	Square Brand.....	27376	Bowker Fertilizer Co., Boston, Mass.	F. W. Woodman, Wolfville, N.S.....	1917..
" 17	'Swift's Animal Brand' for all crops.	27377	Swift's Lowell Fertilizer Co., Boston, Mass.	R. E. Harris & Son, Wolfville, N.S.....	1955..
" 23	Potato Special	27378	American Agricultural Chemical Co., New York.	E. M. Walker, Dartmouth, N.S.....	2033...
			District of Prince Edward Island.—T. Moore, Inspector.		
" 20	Swift's Lowell Bone Fertilizer for Corn & Grain	31121	Swift Lowell Fertilizer Co., Boston, Mass.	Pool & Thompson, Montague Bridge, P.E.I.....	1952...
" 20	Ceres Superphosphate, a Complete Fertilizer.	31122	Nova Scotia Fertilizer Co., Halifax, N.S.	R. E. Mutch, Charlottetown, P.E.I.....	1980..
" 20	Bone and Potash.....	31123	Nova Scotia Fertilizer Co., Halifax, N.S.	R. E. Mutch, Charlottetown, P.E.I	1983...
			District of New Brunswick.—J. C. Ferguson, Inspector.		
April 17	Potato and Vegetable Phosphate.	24361	Bowker Fertilizer Co., Boston, Mass.	D. J. Seely & Son, St. John, N. B.....	1915..
" 18	Swift's Potato Manure...	24362	Swift's Lowell Fertilizer Co., Boston, Mass.	P. Nase & Son, St. John, N.B.....	1956...
" 19	Reid's Superphosphate...	24363	Thos. Reid, St. John, N.B.	Thos. Reid, St. John, N. B.....	1990..
" 20	Special Potato Phosphate	24364	The Provincial Chemical Fertilizer Co., Ltd., St. John Co., (East) N.B.	The Provincial Chemical Fertilizer Co., Ltd., St. John, Co. (East) N.B....	1985...

SESSIONAL PAPER No. 14

FERTILIZERS AS SOLD.

Nitrogen Per Cent.		Result of Analysis. Phosphoric Acid—Per Cent.							Relative value per ton of 2,000 lbs.	Remarks.
Total; including that of nitric acid or ammonia if present.	Total calculated as ammonia.	Soluble in water.	Reverted or citrate, soluble.	Insoluble.	Total.	Total available.	Potash.	Moisture.		
									$ cts.	
2·10	2·55	4·55	3·73	2·12	10·40	8·28	4·76	12·27	22 10	Up to guaranteed value.
1·65	2·00	.....	.....	.....	7·00	.....	2·50	...		
2·18	2·65	4·70	2·73	1·57	9·00	7·43	6·52	11·99	22 75	Up to guarantee.
2·06	2·50	.....	.....	.....	8·00	.....	6·50	.....		
1·60	1·94	3·25	4·75	2·00	10·00	8·00	5·57	8·99	20 74	" "
1·65	2·00	.....	.....	.....	8·00	7·00	4·00	.....	17 61	
2·27	2·75	4·70	5·03	4·24	13·95	9·73	4·45	11·20	24 61	" "
2·47	3·00	.....	.....	.....	10·00	8·00	4·00	.....	21 80	
2·35	2·86	1·50	6·70	6·70	15·00	8·20	2·56	8·99	21 73	" "
2·06	2·50	.....	.....	.....	12·00	9·00	2·25	.....	20 05	
2·07	2·52	3·00	7·18	3·87	14·05	10·18	4·58	12·74	24 28	" "
2·00	3·40	4·00	4·00	2.00	10·00	.....	5·00	.....	21 60	
1·15	1·39	2·25	4·00	4·15	10·40	6·25	8·43	14·54	20 69	" "
0·82	1·00	.....	.....	.....	7·00	6·00	6·00	.....	15 69	
1·79	2·18	3·95	3·55	2·60	10·10	7·50	5·92	7·26	21 43	" "
1·65	2·00	.....	.....	.....	8·00	7·00	4·00	.....	17 61	
0·10	0·13	4·25	2·45	1·30	8·00	6·70	7·25	13·18	15 78	Cannot be identified with any of the 5 brands registered by the Pidgeon Fertilizer Co. Not registered.
2·92	3·55	3·10	4·53	3·32	10·95	7·62	8·89	11·08	28 52	Up to guarantee. No. 1930 is registered as 'Stockbridge Special Complete Manure.' Hence identification is uncertain.
3·30	4·00	.....	.....	.....	7·00	6·00	10·00	.....	28 12	
1·61	1·95	6·05	4·02	2·24	12·31	10·07	2·28	11·15	20 11	Up to guarantee.
1·65	2·00	.....	.....	.....	7·00	6·00	2·00	.....	14 51	
2·24	2·72	5·95	3·98	4·67	14·60	9·93	4·68	9·95	25 22	" "
2·47	3·00	.....	.....	.....	10·00	8·00	4·00	.....	21 80	
2·35	2·86	5·55	3·08	2·57	11·20	8·63	5·44	14·74	24·16	Up to guarantee. No. 2033 is registered as 'Standard Special for Potatoes.' Hence identification is uncertain.
2·06	2·50	5·00	3·00	2·00	10·00	8·00	3·00	.....	19·90	
2·24	2·72	4·05	4·73	4·35	13·13	8·78	3·83	5·12	22 81	Up to guarantee, but identification uncertain; No. 1952 is registered without the words 'for corn and grain.'
1·65	2·00	.....	.....	.....	9·00	8·00	3·00	.....	17 71	
1·54	1·83	8·25	1·73	1·77	11·75	9·98	4·23	12·20	21 80	Up to guarantee.
1·65	2·00	.....	.....	.....	7·00	.....	2·00	.....		
2·83	3·43	.....	13·85	10·35	24·20	13·85	3·03	10·40	30 99	Standard 1983, is registered under the name, 'Blood, Bone and Potash.' Is up to this guarantee; but identification is uncertain.
1 65	2·00	.....	....	.... .	7·00	.....	4·00			
6·02	7·31	....	6·40	3·90	10 30	6·40	2·47	9 53	31 14	Up to guarantee.
1·65	2·00	.....	.....	.....	9·00	8·00	2·00	... .	16 71	
1·37	1·67	4 05	3·50	2·10	9·65	7·55	7·32	8 00	21 32	Up to guarantee, but identification uncertain. No. 1956 is registered as 'Swift's Lowell Potato Manure.'
1·65	2 00	.. .	.....	.....	8·00	7·00	4 00	.....	17 61	
2·74	3·33	1·85	7·75	1·55	11·15	9·60	2·48	20·32	23 01	Nearly up to value of standard sample, whose analysis is quoted. Up to guarantee.
4·41	5·35	2·16	3·41	4·90	10·47	5·57	2·00	5·25	24 80	
3·33	4·05	6·50	0 74	1 20	8·44	7·24	3·53	6·57	28 83	Up to guarantee, but identification uncertain. No. 1985 is registered simply as 'Potato Phosphate.'
2·06	2·50	.....	....	.....	8·00	.....	6·50	.....		

RECORD OF SAMPLES OF

Date of Collection.	Designation.	No. of Sample.	Name and Address of Manufacturer.	Name and Address of Vendor.	Identified with Standard.
1907.			*District of New Brunswick*—Con.		
" 22	New England Peerless Fertilizer.	24365	New England Fertilizer Co. Boston, Mass.	P. Nase, Main st., St. John, N.B.	1949..
" 23	Farm and Garden Phosphate.	24366	Bowker Fertilizer Co., Boston, Mass.	W. B. McKay & Co., Sussex, N.B.	1919..
May 9	Climax Phosphate.	24368	The American Agricultural Chemical Co., New York.	F. McMurchie, St. Stephen, N.B.	2027...
" 9	Bradley's XL Superphosphate of Lime.	29519	The American Agricultural Chemical Co., New York.	Hy. E. Hill, St. Stephen, N.B.	2007..
" 14	Potato Manure.	29520	The American Agricultural Chemical Co., New York.	Solomon Perley, Woodstock, N.B.	2033...
" 15	Thomas Phosphate Powder.	29521	The Anglo-Canadian Chemical Co., St. John, N.B.	J. W. James, Andover, N.B.	1961...
" 15	Columbian Potato.	29522	The Col. Mortimer Co., New York.	Geo. F. Baird Co., Ltd., Perth, N.B.	
May 15	Potato Phosphate.	29523	The Nova Scotia Fertilizer Co., Halifax, N.S.	DeWitt and Hefferman, Perth, N.B.	1982
April 25	Pacific Potato Special.	24367	American Agricultural Co., New York.	Toombs & Son, Moncton, N.B.	2023
			District of Quebec—E. Béland, Inspector.		
April 19	'Victor'	26230	Capleton Chemical Fertilizer Co.	Clovis Mercier, St. Marie, Beauce.	1994
" 19	'Phosphate No. 1.'	26234	Nichols Chemical Co., Capleton, P.Q.	Geo. Gagnon, St. Marie, Beauce.	1992
" 19	'Thomas Phosphate Powder.'	26235	H. O. E. Albert, London, England.	Geo. Gagnon, St. Marie, Beauce.	1971
" 19	Victor	26236	Nichols Chemical Co., Capleton, P.Q.	Geo. Gagnon, St. Marie, Beauce.	1994
" 19	Sure Crop 6 per cent Potato Fertilizer.	26238	Bowker & Co., New York.	Geo. Beaudoin, St Elzear, Beauce.	1922
" 19	Sure Crop Bowker's 6 per cent Potato Fertilizer.	26239	" "	J. Berthiaume, St. Elzear, Beauce.	1922
" 19	Sure Crop	26240	" "	J. Berthiaume, St. Elzear, Beauce.	1920
			District of St. Hyacinthe—J. C. Roulcau, Inspector.		
May 3	Corn Fertilizer	484	Bowker Fertilizer Co., New York.	D. E. Taylor, Kingsley Road, Richmond.	1916
" 7	6 per cent Potash	485	" "	A. J. Brown, Lawrenceville.	1922
" 13	Victor Guano	486	Provincial Chemical Fertilizer Co., St. John, N.B.	Chas. Racicot, St. Hyacinthe.	1986
" 17	Earliana General Fertilizer.	487	T. St. Jacques	Pharmacie St. Hyacinthe, St. Hyacinthe.	
" 1	'Sure Crop Phosphate'.	480	Bowker Fertilizer Co., New York.	G. N. Salisbury, Abbots Corner.	1920
May 1	Potato and Vegetable Phosphate.	481	" "	G. N. Salisbury, Abbots Corner.	1915

SESSIONAL PAPER No. 14

FERTILIZERS AS SOLD.

Nitrogen Per Cent.		Results of Analysis. Phosphoric Acid—Per Cent.					Potash.	Moisture.	Relative value per ton of 2,000 lbs.	Remarks.
Total: including that of nitric acid or ammonia if present.	Total calculated as ammonia.	Soluble in water.	Reverted or citrate, soluble.	Insoluble.	Total.	Total available.				
									$ cts.	
1·12	1·36	1·95	4·72	2·25	8·92	6·67	1·67	9·34	13 69	Up to guarantee.
0·82	1·00	.....	.....	1·00	8·00	7·00	1·00	.....	11 79	
1·99	2·41	5·35	3·05	3·70	12·10	8·40	2·11	14·48	19 76	" "
1·65	2·00	....	... ..	.....	9·00	8·00	2·00	... ..	16 71	
0·81	0·99	4·75	5·18	3·07	13·00	9·93	2·95	17·38	18 02	Up to guarantee, but identification uncertain. No. 2027 is registered as 'Quinnipiac Climax Phosphate, for all crops.'
1·03	1·25	6·00	2·00	2·00	10·00	8·00	2·00	.....	15 50	
1·88	2·28	5·40	3·17	3·70	11·27	8·57	1·71	16·34	19 18	Up to guarantee.
2·06	2·50	5·00	3·00	2·00	10·00	8·00	1·50	.. ..	18 40	
3·28	3 98	2·75	3·24	2·10	8·59	5·99	10·67	11·16	29·32	Up to guarantee. No. 2033 is registered as 'StandardSpecial for for Potatoes.' Hence identification is uncertain.
2·06	2·50	5·00	3·00	2·00	10·00	8·00	3·00	.....	19 90	
.....	.....	.....	9·21	5·87	15·08	9·21	.....	0·16	11 89	Below guarantee; but identification is uncertain. No. 2039 is registered as 'Ohlendorff's ground basic slag.'
.....	.....	.....	15·18	2·62	17·80	.....	.....	.....	16 00	
1·18	1·43	3·20	1·14	3·12	7·46	4·34	3·16	16·23	12 90	Not registered.
1·90	2·31	6·05	1·25	2·02	9·32	7·25	7·21	10·93	.....	Up to guarantee.
1·65	2·00	.....	.....	.....	7·00	.....	4·00	....	.....	
2·04	2·48	4·70	3 96	3·45	11·71	8·66	3·67	17·23	21 64	"
2·06	2·50	5·00	3·00	2·00	10·00	8·00	3·00	.....	19 90	
2·10	2·55	4·40	2·80	5·66	12·86	7·20	2·64	9·54	19 84	Up to guarantee.
2·00	.....	.....	.....	.....	7·00	.....	3·00	.....	.....	
0·77	0·93	2·33	5·20	2·65	10·18	7·53	trace	5·12	15 38	"
.....	...	.....	.....	.....	10·00	.....	.....	... ...	... ..	
.. ..	.....	.....	11·64	5·48	17·12	11·64	.....	0·14	14 45	"
.....	.....	.....	.....	.....	17·00	.....	.....	....	... ..	
1·05	1·27	3·04	3·80	3·10	9·94	6·84	2·57	8·60	14 90	"
2·00	....	.....	.. ...	....	7·00	.....	3·00	.....	.....	
1·33	1·61	4·59	3·55	0·53	8·67	8·14	5·64	10·77	19·73	"
0·82	1·00	.....	.....	.....	7·00	6·00	6·00	.... .	17 59	
1·75	2·12	4·38	3·41	0 85	8·64	7·79	3·84	13 42	19 05	"
0·82	1·00	.....	.....	.....	7·00	6·00	6·00	.....	17 59	
1·01	1·22	4·97	3·32	0·83	9·12	8·29	3·12	14·04	16 42	Up to guarantee. No. 1,920 is registered as 'Bowker's Sure Crop Phosphate.' Hence identification uncertain.
0·82	1·00	.....	.....	.....	9·00	8·00	2·00	.....	13 92	
1·89	2·29	3·83	3·69	2·28	9·80	7·52	2·01	14·30	17 78	Up to guarantee. No. 1,916 is registered as 'Bowker's Corn Phosphate.' Hence identification uncertain.
1·65	2·00	.....	.....	....	9·00	8·00	2·00	.....	.....	
1·26	1·53	4·27	2·64	2·02	8·93	6·91	5·44	11·17	18 36	Up to guarantee. No. 1,922 is registered as 'Bowker's 6 p.c. Potato Fertilizer.' Hence identification. uncertain.
0·82	1·00	.....	.....	.....	7·00	6·00	6·00	.....	17 59	
1·54	1·87	4·56	8·90	1·97	15·43	13·46	1·87	11·35	22 96	Up to guarantee.
1·65	2·00	.....	.....	.....	7·00	.....	2·50	.....	.....	
4·27	5·18	0·40	3·76	0·49	4·67	4·16	7·34	1·66	26 62	Not registered.
1·26	1·53	5·79	2·03	1·98	9·80	7·82	4·87	13·05	18 93	Up to guarantee.
0·82	1·00	.....	.....	.....	9·00	8·00	2·00	.....	13 92	
1·96	2·38	5·39	3·41	2·17	10·97	8·80	4·79	12·36	22 32	"
1·65	2·00	.....	.....	.....	9·00	8·00	2·00	.....	16 71	

RECORD OF SAMPLES OF

Date of Collection.	Designation.	No. of Sample.	Name and Address of Manufacturer.	Name and Address of Vendor.	Identified with Standard.
1907.			*District of St. Hyaetnthe —Con.*		
May 1	'Tucker's Improved Bone Phosphate' for all crops	482	American Agricultural Chemical Co., N.Y.	H. H. Miner, Dunham....	2021
			District of Montreal—J. J. Costigan, Inspector.		
April 30	Celery and Vegetable ...	32507	W. A. Freeman & Co., Hamilton.	Wm. Ewing Co., Montreal.	1933
" 30	Sure Growth.....	32508	" " ..	" " ..	1931
" 30	Potato Manure	32509	" " ..	" " ..	1935
" 30	Tobacco Manure.... ...	32510	" " ..	" " ..	1937
" 30	Royal Canadian.....	32511	Capelton Chemical Co.....	R. J. Latimer & Co., 21 St. Antoine St., Montreal.	1993
" 30	Victor	32512	Fertilizer Co., Buckingham	R. J. Latimer & Co., 21 St. Antoine St., Montreal.	1994
" 30	Eureka	32513	" " ..	R. J. Latimer & Co., 21 St. Antoine St., Montreal.	.....
" 30	No. 1.....	32514	" " ..	R. J. Latimer & Co., 21 St. Antoine St., Montreal.	1992
May 10	Vermont	32515	Bowker Fertilizer Co.....	O. Chevalier, Joliette, P.Q.	1913
" 14	Corn Phosphate...	32516	"	Thos. Cogland, Hurdmans, P.Q.	1916
" 14	Sure Crop...	32517	"	Ehos. Cogland, Hurdmans, P.Q.	1920
" 14	'Bradley's B'.....	32518	American Agricultural Chemical Co	Wm. Anderson, Hurdmans, P.Q.	1943
			District of Ottawa—E. Belisle, General Inspector.		
May 31	Royal Fertilizer.....	32243	Standard Fertilizer and Chemical Co., Smith's Falls.	Manufacturers.....	2001
" 31	Victor Fertilizer..	32245	Capelton Chemical and Fertilizer Co., Buckingham, Que.	A. E. Cameron, Brockville.	1994
" 31	Bradley's Sea Fowl	32246	American Agricultural Chemical Co., Buffalo, N.Y.	A. Brown & Sons, Brockville.	1943
" 31	Potato Fertilizer.....	32247	" " ..	" " ..	2033
" 31	Complete Manure.....	32248	" " ..	" " ..	1906
June 4	Market Gardeners Special Fertilizer.	32250	The Nichols Chemical Co., Capelton, P.Q.	Kenneth McDonald, Market Square, Ottawa, Ont.	.....
			District of Kingston—Jas Hogan, Inspector.		
April 22	Potato Manure	32439	W. A. Freeman, Hamilton.	W. C. Peters, Brock St., Kingston.	1935
" 23	Land Rock.....	32440	R. C. Mosher, N.B.....	Chase Bros., Colborne....	.....

SESSIONAL PAPER No. 14

FERTILIZERS AS SOLD.

Nitrogen Per Cent.		Result of Analysis, Phosphoric Acid—Per Cent.					Potash.	Moisture.	Relative value per ton of 2,000 lbs.	Remarks.
Total; including that of nitric acid or ammonia if present.	Total calculated as ammonia.	Soluble in water.	Reverted or citrate, soluble.	Insoluble.	Total.	Total available.				
1·54	1·87	6·95	2·46	1·85	11·26	9·41	2·36	15·58	19 20	Up to guarantee. No. 2021 is registered as 'Bowker's Potash Bone Phosphate.' Hence identification uncertain.
1·03	1·25	6·00	2·00	2·00	10·00	8·00	2·00	.....	15 50	
4·13	5·01	1·48	4·60	1·51	7·59	6·08	6·50	14·53	27 83	Up to guarantee.
4·12	5·00	.....	.....	.....	9·00	.....	5·00	.....	.....	
2·52	3·06	1·51	4·10	4·41	10·02	5·61	3·30	14·85	19·51	"
2·88	3·50	.....	.....	.....	8·00	.....	3·00	.....	.....	
3·52	4·28	1·08	5·19	2·92	9·19	6·27	5·44	10·23	25 29	"
2·47	3·00	.....	.....	.....	8·00	.....	5·00	.....	.....	
3·92	4·76	2·68	5·19	1·61	9·48	7·87	2·98	10·31	25 72	"
2·47	3·00	.....	.....	.....	7·00	.....	4·00	.....	.....	
2·87	3·48	5·02	3·29	1·34	9·65	8·31	4·44	8·75	24 24	"
3·30	4·00	.....	.....	.....	9·00	.....	5·00	.....	.....	
1·54	1·87	2·87	4·31	3·97	11·15	7·18	2·65	9·90	17 26	"
2·00	.....	.....	.....	.....	7·00	.....	3·00	.....	.....	
1·89	2·29	1·90	3·43	1·58	6·91	5·33	3·31	5·17	16 26	Not registered.
0·84	1·02	2·50	5·88	2·72	11·10	8·38	0·33	7·20	13 47	Up to guarantee.
.....	.....	.....	.....	.....	10·00	.....	.....	.....	.....	
2·52	3·06	5·64	3·34	1·54	10·52	8·98	5·04	14·73	24·51	"
2·47	3·00	.....	.....	.....	10·00	8·00	4·00	.....	.....	
1·87	2·29	6·67	1·75	1·86	10·28	8·42	2·01	14·29	18 86	"
1·65	2·00	.....	.....	.....	9·00	8·00	2·00	.....	.....	
1·33	1·61	4·73	2·31	1·56	8·60	7·04	2·23	12·77	15 44	"
0·82	1·00	.....	.....	.....	9·00	8·00	2·00	.....	13 92	
1·61	1 95	5·87	2·14	1·68	9·69	8·01	4·48	10·49	19 87	Up to guarantee. No. 1943 is registered as 'Bradley's B. D. Sea Fowl Guano.' Hence identification is uncertain.
2·06	2·50	6·00	2·00	1·00	9·00	8·00	1·50	.....	18 20	
2·78	3·38	12·12	4·30	2·10	18·52	16·42	5·18	10·00	34 54	Up to guarantee.
1·65	2·00	.....	.....	.....	10·00	8·00	3·00	.....	18 01	
1·71	2 07	4·23	3·62	1·72	9·57	7·85	5·06	6·15	20 45	"
2·00	.....	.....	.....	.....	7·00	.....	3·00			
1·94	2·35	6·06	3·09	2·07	11·22	9·15	2·62	17·07	20 51	"
2·06	2·50	6·00	2·00	1·00	9·00	8·00	1·50	.....	18 20	
2·26	2·74	5·08	3·32	2·25	10·75	8·50	5·99	13·64	22 10	Up to guarantee. No. 2033 is registered as 'Standard Special for Potatoes.' Hence identification uncertain.
2·06	2·50	5·00	3·00	2·00	10·00	8·00	3·00	.....	19 90	
3·37	4·09	5·56	3·42	1·88	10·86	8·98	12·41	11·76	34 87	Up to guarantee. No. 1906 is registered as 'A. A. C. Co., Aroostook Complete Manure.' Hence identification uncertain.
2·40	3·00	5·00	1·00	1·00	7·00	6·00	10·00	.....	25 56	
3·06	3·71	7·87	2·31	3·27	13·45	10·18	5·62	6·85	28 99	Not registered.
2·34	2·84	3·56	4·29	3·42	11·27	7·85	4·17	6·36	22 14	Up to guarantee.
2·47	3·00	.....	.....	.....	8·00	.....	5·00			
.....	.....	.....	.....	.....	Trace.	.....	Trace.	7·66	.....	Not registered. This substance is not technically a chemical fertilizer and should not have been purchased.

RECORD OF SAMPLES OF

Date of Collection.	Designation.	No. of Sample.	Name and Address of Manufacturer.	Name and Address of Vendor.	Identified with Standard.
1907.			*District of Kingston*—Con.		
" 24	Potato Manure	32441	W. A. Freeman, Hamilton.	G. S. Thompson, Cobourg.	1935
" 24	Sure Growth	32442	" "	" "	1931
" 24	Lawn Fertilizer	32443	" "	" "	
" 24	Bone Potash	32444	" "	" "	1932
" 24	Plaster	32445	Not known	E. A. Duncan, Cobourg	
" 25	High Grade Potash	32446	American Agricultural and Chemical Co., Buffalo, N.Y.	G. Mathews, Trenton	1946
			District of Toronto—H. J. Dager, Inspector.		
May 11	Lawn Fertilizer	33267	Wm. Rennie & Co., Toronto.	Wm. Rennie & Co., Toronto.	
" 11	Farm and Garden	33268	" "	" "	
" 11	Freeman's	33269	Wm. A. Freeman, Hamilton.	Steel, Briggs & Co., Toronto.	
" 13	'Conc Tankage'	33270	Wm. Davies & Co., Toronto.	Wm. Davies Co., Toronto.	1891
" 13	'Tankage'	33271	" "	" "	
" 13	"	33272	Park, Blackwell Co., Toronto.	Park, Blackwell Co., Toronto.	
" 13	'General'	33273	Western Fertilizer Co., Toronto.	Western Fertilizer Co., Toronto.	
" 13	Bone and Potash	33274	" "	" "	
" 22	'Tankage Fertilizer'	33275	Fowler's Canadian Co., Hamilton.	Fowler's Canadian Co., Hamilton.	
" 22	Flower Food Fertilizer	33276	Wm. A. Freeman, Hamilton.	Steel, Briggs Co., Hamilton.	
June 18	Lawn Fertilizer	33221	" "	T. L. Taylor, Brampton, Ont.	
" 18	Plant Food	33277	Wm. Rennie, Toronto, Ont	C. Stork & Son, Brampton, Ont.	
" 18	Bone Meal	33278	W. A. Freeman, Hamilton. Ont.	Dale Estate, Brampton, Ont.	1938
" 20	Bone and Potash Fertilizer.	33279	Western Fertilizer Co., Toronto, Ont.	Western Fertilizer Co., Toronto.	
" 20	General Fertilizer.	33280	" "	" "	
			District of London—T. Kidd, Inspector.		
May 8	Bone Flour	30351	W. A. Freeman, Hamilton, Ontario.	Jas. Anson & Son, Guelph, Ont.	1938
" 9	Fertllizer (Harris H)	30354	W. Harris & Co., Danford Road, near Toronto, Ont.	J. A. Simmons, Toronto, Ont.	1997

SESSIONAL PAPER No. 14

FERTILIZERS AS SOLD.

Nitrogen Per Cent.		Result of Analysis. Phosphoric Acid—Per Cent.					Potash.	Moisture.	Relative value per ton of 2,000 lbs.	Remarks.
Total: including that of nitric acid or ammonia if present.	Total calculated as ammonia.	Soluble in water.	Reverted or citrate, soluble.	Insoluble.	Total.	Total available.				
									$ cts.	
3·43	4·16	3·03	3·60	3·19	9·82	6·63	5·84	4·24	26 06	Up to guarantee.
2·47	3·00	.....	.....	.....	8·00	... .	5·00			
2·97	3·60	2·01	3·60	4·37	9·98	5·61	3·11	6·63	20 89	"
2·88	3·50	.... .	.....	.....	8·00	.. .	3·00			
2·88	3·49	4·12	2·70	4·65	11·47	6·82	3·41	9·84	22 51	Not registered.
3·14	5·81	1·75	4·26	3·68	9·69	6·01	6·91	5·27	25 17	Up to guarantee.
1·65	2·00	.....	.....	.....	9·00	.....	6·00			
Trace.	.....	.....	... .	... ..	Trace.	.....	.....	6·52	.....	Not registered. See note to 32440.
2·43	2·95	5·07	2·75	3·33	11·15	7·82	4·44	6·28	22 81	Below guarantee in potash.
1·65	2·00	6 00	2·00	1·00	9·00	8·00	10·00	.....	25 31	
2·48	3·01	0·11	6·83	3·96	10·90	6·94	0·12	2·52	17 39	Not registered.
3·16	3·84	0·17	8·51	3·10	11·78	8·68	0·16	2·98	21 40	"
3·06	3·71	2·28	4·14	3·50	9·92	6·42	3·14	5·07	21 88	Not registered or incorrectly named by the vendor.
12·44	15·10	.....	.... .	0·28	1·23	0·95	0·98	8.02	41 92	Up to guarantee. No. 1891 is
13·17	16·00	.....	.....	.....	.. ..	.....	. . .	7·20	42 14	registered as 'Toronto B.' Hence identification uncertain.
8·17	9 92	0·27	6·95	3·68	10·90	7·22	0·27	6·56	35 48	Not registered or insufficiently defined by the vendor.
7·76	9·42	0·20	7·02	3·48	10·70	7·22	0·21	5·21	34 05	" "
1·93	2·34	None.	None.	0·88	0·89	.	0·63	1·97	7 46	Not registered. Possesses no value to justify its being sold as a chemical fertilizer.
0·26	0·29	None.	0·54	1·08	1·62	0·54	0·77	0·57	2 57	" "
7·72	9·37	0·37	7·13	1.82	9·32	7·50	0·29	6·14	33 83	Not registered.
4·87	5·91	1·60	3·44	2·41	7·46	5·04	2·92	1·96	25 91	"
1·80	2·17	9·82	2·56	4·10	16·48	12·38	0·47	8·85	22 42	"
2·88	3·47	Trace.	8·70	3·05	11·75	8·70	0·43	2·32	20 71	"
6·27	7·56	Trace.	10·62	7·55	18·17	10·62	0·14	5·83	34 15	Up to guarantee.
2·47	3·00	.....	....		20·00					
0·21	0·25	Trace.	1·70	1·85	3·55	1·70	1·37	1·00	4 51	Not registered. Has no value to warrant its being sold as a chemical fertilizer.
1·93	2·35	Trace.	2·08	1·69	3·77	2·08	1·63	2·15	10 99	Not registered.
4·95	6·01	0·17	12·96	2·65	15·78	13·13	0·21	1·96	32 30	Identification uncertain. No. 1938
2·47	3·00	...	.....	.....	20·00					is registered as 'Freeman's Pure Bone Meal,. Up to standard.
6·39	7·76	0·11	8·39	2·53	11·03	8·50	0·08	5·13	31 93	Up to standard sample. Analysis
5·88	7·14	.....	6·20	5 95	12·15	6·20	.....	8·25	28 60	of standard sample is quoted. Up to guarantee.

Date of Collection.	Designation.	No. of Sample.	Name and Address of Manufacturer.	Name and Address of Vendor.	Identified with Standard.
1907.			*District of London*—Con.		
May 10	Sure Growth..	30361	Wm. A. Freeman, Hamilton, Ont.	Steel, Briggs & Co., Toronto, Ont.	1931
" 15	Bone Meal..	30371	W. Harris & Co., Danford Road, near Toronto, Ont.	W. Harris & Co., Danford Road, near Toronto, Ont.	1996
" 15	Blood and Bone..... ..	30372	W. Harris & Co., Danford Road, near Toronto, Ont	W. Harris & Co., Danford Road, near Toronto, Ont.	1997
" 16	Bone Dust.....	30373	American Agricultural Co., Buffalo, N.Y.	Jno. A. Bruce, Hamilton, Ont.	.....
" 16	Bone Meal.....	30374	W. A. Freeman, Hamilton, Ont.	W. A. Freeman, Hamilton, Ont.	1938
" 22	Blood, Bone and Tankage.	30375	Canadian Packing Co., London, Ont.	Canadian Packing Co., London, Ont.	.....
			District of British Columbia —E. B. Parkinson, Insp.		
" 13	Nitrate of Soda.	32086	The Victoria Chemical Co., Victoria, B.C.	Wm. Rennie Co., Hastings St., Victoria, B.C.	2045
" 13	Bone Meal.....	32087	Sylvester Feed Co., Victoria, B.C.	Wm. Rennie Co., Hastings St., Victoria, B.C.	1876
" 13	'A' Fertilizer.	32088	The Victoria Chemical Co., Victoria, B.C.	Wm. Rennie Co., Hastings St., Victoria, B.C.	2040
" 13	'B' "	32089	The Victoria Chemical Co., Victoria, B.C.	Wm. Rennie Co., Hastings St., Victoria, B.C.	2041
" 13	Muriate of Potash.	32090	The Victoria Chemical Co., Victoria, B.C.	W. J. Henry, Westminster Road, Vancouver, B.C.	2048
" 13	Nitrate of Soda.	32091	The Victoria Chemical Co., Victoria, B.C.	W. J. Henry, Westminster Road, Vancouver, B.C.	2045
" 13	'B' Fertilizer.....	32092	The Victoria Chemical Co., Victoria, B.C.	M. J. Henry, Vancouver, B.C.	2041
" 14	Fish Guano	32093	Fraser River Oil and Guano Co., Fraser River, B.C..	Brackman & Kerr Milling Co., Vancouver, B.C.	1884
" 14	'B' Fertilizer.	32094	The Victoria Chemical Co., Victoria, B.C.	Brackman & Kerr Milling Co., Vancouver, B.C.	2041
" 4	'B' "	32095	The Victoria Chemical Co., Victoria, B.C.	Brown Bros., Vancouver, B.C.	2041
" 4	'C' "	32096	The Victoria Chemical Co., Victoria, B.C.	Brown Bros., Vancouver, B.C.	2042
" 4	Superphosphate.....	32097	The Victoria Chemical Co., Victoria, B.C.	Brown Bros., Vancouver, B.C.	2044
" 4	Sulphate of Potash.....	32098	The Victoria Chemical Co., Victoria, B.C.	Brown Bros., Vancouver, B.C.	2047
" 4	Muriate of Potash..	32099	The Victoria Chemical Co., Victoria, B.C.	Brown Bros., Vancouver, B.C.	2048
" 4	Bone Meal.....	32100	P. Burns Co., Vancouver, B.C.	Brackman & Kerr Milling Co., Vancouver, B.C.	1883

SESSIONAL PAPER No. 14

FERTILIZERS AS SOLD.

Nitrogen Per Cent.		Result of Analysis. Phosphoric Acid—Per Cent.					Potash.	Moisture.	Relative value per ton of 2,000 lbs.	Remarks.
Total; including that of nitric acid or ammonia if present.	Total calculated as ammonia.	Soluble in water.	Reverted or citrate, Soluble.	Insoluble.	Total.	Total available.				
									$ cts.	
3·46	4·20	1·90	4·12	4·33	10·35	6·02	2·93	3 81	22 81	Up to guarantee.
2·88	3·50	.....	. .	.. ..	8·00	.....	3·00	....	.....	
3·37	4·09	Trace.	9·64	9·49	19·13	9·64	0·06	5·72	24 30	Not up to standard sample. Analysis of standard sample is quoted.
4·76	5·84	.....	15·04	6·39	21·43	15·04	.. .	4·26	33 69	
6·28	7·62	0·17	7·67	2·96	10·80	7·84	0·24	4·64	29 87	May be 'Fertilizer H,' No. 1997 —but cannot identify with certainty. If so is up to standard.
5·88	7·14	.....	6·20	5·95	12·15	6·20	.....	8·25	28 60	
3·45	4·19	0·38	4·27	14·36	19·01	4·65	0·10	4·84	20 60	Am. Agr. Co., Bufialo, register 10 brands, but no brand bears the name 'Bone Dust'—under which this sample is sold.
4·58	5·56	0·06	8.85	10·59	19·50	8·91	0·10	6·97	27 74	Up to guarantee.
2·47	3·00	.....	.....	.....	20·00					
6·55	7·91	Trace.	10·43	1·82	12·25	10·43	0·29	5·00	33 27	Not registered.
15·95	19·37	.....	.....	.....	.....	.....	. ..	2·72	54 23	Up to guarantee.
16·00	... .	.....	.....	.....	.....	.....	.....	... ..	54 40	
2·24	2·72	Trace.	7·20	6·60	13·80	.....	.....	5·80	17 07	Identification of this sample is uncertain. Apparently below standard, but may be unregistered.
3·82	4·65	1·20	9 97	4·15	15·32	11·17	0·05	.....	25 93	
2·80	3·40	9·00	.. .	1·00	10·00	... ..	10·10	20·94	30 72	Up to guarantee.
4·00	.....	.....	.....	.....	10·00	.... .	7·00			
3·36	4·08	5·40	3·80	3·00	12 20	... .	12·00	13·40	34 98	Up to guarantee.
3·50	.....	.... .	...	.....	9·00	.....	11·00			
.....	.....	....	. . .	.....	. .	.....	54·80	2·52	54 80	Up to guarantee.
.....	.....	.....	.. ..	.....	.....	.....	50·00	. . ..	50 00	
16·09	19·53	.....	.....	.....	.. ...	....	.....	1·84	54 71	Up to guarantee.
16·00	.....	.....	. .	....	....	....	....	....	54 40	
3·92	4·76	7·50	Trace.	0·50	8·00	.....	12·20	9·80	34 68	Up to guarantee.
3·50	....	.....	.....	...	9·00	.....	11·06	.		
8·68	10·54	0·80	4·70	0·80	6·30	... .	....	11·00	34 15	Up to guarantee.
8·34	10·13	....	....	.....	6·55	.....	. ..	6·32		
3·08	3·74	9·00	Trace.	Trace.	9·00	...	11·70	19·86	32 97	Up to guarantee.
3·50	.	....	.....	. .	9·00	....	11·00			
3·08	3·74	9·00	0·40	Trace.	9·40	.....	11·70	19·60	33 41	Up to guarantee.
3·50	....	.....	....	.....	9·00	.....	11·00			
1·12	1·36	11·30	.. ...	. ....	11·30	... .	10·30	22·60	27 69	Up to guarantee.
... .	.....	...	.....	... .	12·50	.....	11·00			
Trace.	Trace.	16·30	0·40	Trace.	16·70	.....	.....	19·00	20 00	Up to guarantee.
.....	. ..	.....	....	.....	16·00					
.. ....	....	.....	.....	. . .	.....	.....	51·00	0·96	51 00	Up to guarantee.
.....	.....	....	.....	....	.....	.....	50·00	....	50 00	
.....	....	.....	.....	.....	.....	...	53·00	4·27	53 00	Up to guarantee.
.....	....	.....	.....	.....	.....	.....	50·00	.....	50 00	
4·20	5·10	Trace.	10·20	9·50	19·70	.....	....	8·78	27 51	Not up to guarantee, but practically identical with standard sample, of which the analysis is quoted.
3·05	3·70	.....	.....	.....	29·00	.....	.....	3·00		
3·71	4·50	0·96	10·72	10·39	22·07	11·68	0·48	7·00	28 41	

APPENDIX F.

BULLETIN No. 140—MAPLE SUGAR, 1907.

OTTAWA, July 27, 1907.

W. J. GERALD, Esq.,
Deputy Minister of Inland Revenue.

SIR,—I have the honour to submit the results of examination of two hundred and fifty-seven samples of maple sugar, purchased throughout the Canadian market by our inspectors, in April and May of the present year :

Inspectoral District.	Samples declared as mixture.	Found guenine.	Found adultera-ted.	Doubtful.	Total.
Nova Scotia	0	15	5	0	20
Prince Edward Island	3	7	4	1	15
New Brunswick	0	18	2	0	20
Quebec	0	22	0	0	22
St. Hyacinthe	0	18	1	1	20
Montreal	0	20	0	0	20
Ottawa	0	13	7	0	20
Kingston	1	2	16	0	19
Toronto	0	13	5	2	20
London	0	14	7	0	21
Manitoba	0	15	5	0	20
Calgary	0	15	5	0	20
British Columbia	1	13	0	6	20
	5	185	57	10	257

The following synopsis of work done in the inspection of maple sugar since 1905 is of interest in this connection :

INSPECTION OF MAPLE SUGAR.

Date of inspection.	Bulle-tin.	Sold as Mixture	Genuine	Doubt-ful.	Adulter-ated.	Total.	PERCENTAGE.	
							Genuine	Adul-terated.
March 1905	102	0	12	2	8	22	55	37
May 1905	102	0	15	0	3	18	83	17
March 1906	120	0	11	3	12	26	42	46
May 1906	120	1	44	0	7	52	85	13
May 1907	140	5	185	10	57	257	72	22

It is worthy of note, that as was to be expected, the highest percentage of genuine samples has been found in the May collections, i.e., during the sugar-making season, and immediately after it.

The whole of the work recorded in this Bulletin has been done by Mr. A. Valin, of this Laboratory; and I am able to speak confidently of the care and assiduity with which he has carried out the task assigned to him. Mr. Valin has prepared a memorandum, describing his methods, which I include with this report.

With regard to the standards adopted, I may say that these have been determined by very extensive research work done in this laboratory; and can be depended upon to do full justice to the manufacturer of maple sugar. It is well known that many samples, perhaps most samples, of genuine maple sugar, give decidedly higher ash, and a decidely heavier precipitate, than 0.50 and 2.00 per cent, as well as a higher malic acid value than 0·40.

It is therefore quite within the limits of possibility that manufacturers should take the advantage of these facts, and, under careful supervision, dilute a genuine article with cane sugar, and still keep such adulterated product within the limits fixed as characterizing genuine maple sugar. It is indeed not too much to say that several of the samples now reported and passed as genuine, appear to justify a suspicion of such treatment as indicated. Since, however, nothing short of certainty can be permitted to influence the analyst's decision, the cases in question get the benefit of whatever doubt may exist in his mind.

Finally I would respectfully recommend that this report be published as Bulletin No. 140.

I have the honour to be, sir,
Your obedient servant,

A. McGILL,
Acting Chief Analyst

MEMORANDUM.

Maple sugar is a crude product of the maple sap, which cannot be refined without losing its special flavour. The special value of maple sugar is due, not to the sugar content, but to that delicate flavour destroyed by refining. The colour of pure maple goods varies from straw yellow to a dark brown. The colour has no relation to the flavour, but the demand is greatest for the lighter grades which command a higher price on the market. All pure maple goods do not possess the characteristic flavour, in the same degree. This is explained by (1) the nature of the sap, (2) manipulation in manufacture.

Adulteration of maple sugar is commonly effected by addition of granulated sugar; occasionally by the addition of light brown sugar. Of the 57 samples found adulterated, in the present collection, the adulterant seems to be, without exception, granulated sugar. Samples of pure maple sugar and those adulterated with granulated, are clearly differentiated by their ash content. Only a trace of ash is found in granulated sugar, while the percentage of ash in maple sugar reaches 0.50 to about 1. Commercial brown sugar has an ash content similar to that of the maple; but the chemical character of this ash is different.

Methods have been devised by C. Jones, Chemist to the Vermont Agricultural Experiment Station, for the detection of brown sugar in admixture with maple sugar. Maple products form a large precipitate with basic lead acetate, the exact composition of which is not known, but which permits us to detect the presence of refined sugar. The examination, in this laboratory, of a large number of samples of known purity has enabled us to set certain limits for genuine sugar. Granulated sugar forms but very little precipitate with the above reagent, while brown sugar gives about a third to one-half the amount of precipitate given by a normal maple sugar.

Another important constant is the malic acid value, which is much greater in genuine maple products than in adulterated samples.

The determination of the ash, and of the lead subacetate precipitate, together with the malic acid value is found to be sufficient for the detection of the adulterants now

in use. The following standards have been adhered to in judging maple sugar in the present bulletin :—

GENUINE.—Lead subacetate precipitate above 2 per cent. per 100 grmms dry substance ; total ash not less than 0.50 per 100 grmms dry substance ; malic acid value not less than 0.40.

DOUBTFUL.—Lead subacetate precipitate between 2.00 and 1.80 per 100 grmms dry substance ; ash not less than 0.50 per 100 grmms dry substance ; malic acid value not less than 0.40. Samples giving total ash slightly below 0.50 per 100 grmms dry substance, and low malic acid value have been classified as doubtful.

ADULTERATED.—Lead subacetate precipitate less than 1.80 per 100 gramms dry substance ; total ash less than 0.50 per 100 grmms dry substance ; malic acid less than 0.40.

In order te establish uniformity of standards for maple sugar and maple syrup, the ash and the lead subacetate precipitate have been expressed for 100 grmms dry substance.

The methods in use in the Inland Revenue Laboratory for the detection of the adulteration in maple products, may be described as fallows :—

Lead subacetate precipitate. Five grammes sugar is weighed into a large test-tube and dissolved into 20cc water. Two cc of lead subacetate solution (sp. gr. 1.26) are added and the solution mixed. After standing two or three hours, the mixture is filtered into a sugar tube, washed four or five times with warm water, dried and weighed. The precipitate obtained, multiplied by 22.22 gives the lead subacetate for 100 grmms dry substance, assuming the sugar to contain 10 per cent. of water.* The standard lead subacetate solution is prepared as fallows :—

Boil for half an hour 430 grmms of normal lead acetate and 130 grmms of litharge with 1000cc water. Cool the mixture, allow to settle, and dilute the supernatent liquid to 1.26 specific gravity. (United States Dept. Agric. Div. Chem. Bull. 65, p. 84).

NOTE.—It is of the greatest importance that the above solution should have a specific gravity of 1.26, and that an excess of reagent should be avoided.

The error of manipulation with the above method on 75 samples worked in duplicate has been found to be 0.22 for a lead subacetate precipitate varying from 2 to 0.20 per grmms dry substance.

ASH.—Ten grmms of the sample is weighed into a flat bottom platinum dish of 100cc capacity ; heated slowly over a bunsen burner, until charred, then burned at a low red heat to a white or grey ash. The dish is placed in a desiccator till cold, and weighed.

The number of milligrams of ash multiplied by 11.1 gives the percentage of ash per 100 grmms dry substance, assuming the sugar to contain 10 per cent. water.

MALIC ACID VALUE.—The method used was devised by Hortvet as follows :—

Six and seven tenths grmms of the sample is weighed into a 200cc beaker and water added to make a volume of 20cc. The solution is made slightly alkaline with ammonia, 1cc of a 10 per cent. solution of calcium chloride is added ; then 60cc of 95 per cent. alcohol. The beaker is covered with a watch glass and heated for one half-hour on a water bath, when the flame is turned off and the beaker left to stand over night. The material in the beaker is then filtered through a good quality filter paper, the precipitate washed with hot 75 per cent. alcohol to free from solubie calcium salt, dried and ignited. From 15 to 20cc ef tenth normal hydrochloric acid is added to to the ignited residue, the lime thorougly dissolved by careful boiling, and the excess of acid titrated with tenth normal sodium hydroxide, using methyl orange as an indicator. One tenth of the number of cubic centimeters of acid neutralized expresses the result, which for the present will be called ' Malic Acid Value.'

A. VALIN.

* The determination of the water content in 32 samples of maple sugar give a maximum 11.17 and a minimum 3.05, mean 8.01. The same conclusion has been reached by C. H. Jones, Chemist, Vermont Experiment Station (Rep. 1905, p. 330).

RECORD OF MAPLE SUGAR SAMPLES, ANALYZED BY INLAND REVENUE DEPARTMENT LABORATORY.

District of Nova Scotia—R. J. Waugh, Inspector.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Percentage on Dry Substance. Lead Subacetate precipitate.	Percentage on Dry Substance. Total Ash.	Malic Acid Value.	Remarks.
1907.											
April 18	Maple Sugar	27301	Larder Hubley & Co., Halifax, N. S.	1 lb.,	20c.	J. C. Harrison, South Farmington, N. S.		4.95	1.01		Genuine.
" 18	"	27302	W. C. Anderson, Halifax, N. S.	1 "	20c.	Unknown		4.35	0.81		"
" 18	"	27303	E. W. Crease & Son, Halifax, N. S.	1½ "	30c.	"		4.51	0.92		"
" 18	"	27304	W. J. Hopgood & Son, Halifax, N. S.	1 "	26c.	Furnished by Maritime Dairy Co., Sussex, N. B.		3.20	0.70		"
" 19	"	27305	Moirs, Limited, Halifax, N. S.	1¼ "	30c.	Unknown		1.65	0.49	0.04	Adulterated.
" 19	"	27306	C. Crasce, Halifax, N. S.	1½ "	30c.	"		2.37	0.64		Genuine.
" 19	"	27307	P. Gasper, Halifax, N. S.	1 "	20c.	Vendor		1.59	0.55	0.10	Adulterated.
" 19	"	27308	Geo. Wakefield, Halifax, N. S.	1¼ "	30c.	Furnished by Maritime Dairy Co., Sussex, N. B.		3.33	0.64		Genuine.
" 22	"	27309	D. H. Eaton, Kentville, N. S.	1 "	20c.	Mr. Quacco, Cumberland Co., N. S.		0.84	0.28	0.06	Adulterated.
" 22	"	27310	S. L. Cross, Kentville, N. S.	1¼ "	30c.	F. Doyle, North Alton, N. S.		4.64	1.07		Genuine.
" 23	"	27311	Mr. L. C. Hutchison, Wolfville, N. S.	1¼ "	25c.	Furnished by E. McKenzie, Springhill, N. S.		4.55	0.94		"
" 24	"	27312	Dodge & Co., Windsor	1 "	22c.	D, K. Gilbert, Gilbert's Mountain, N. S.		3.66	0.92		"
" 24	"	27313	N. Livingstone, Windsor, N. S.	1½ "	20c.	Sugars, Limited, Montreal.		1.44	0.39	0.06	Adulterated.
" 24	"	27314	Jno. Riley, Windsor, N. S.	1 "	20c.	Unknown		4.37	0.81		Genuine.
" 24	"	27315	Jno. Lynch & Sons, Windsor, N. S.	1 "	20c.	"	Cumberland Sugar.	3.64	0.78		"
" 26	"	27316	J. & G. Berringer, Lunenburg, N. S.	1 "	20c.	Mr. Dorris, Specticle Lake, N. S.		4.40	0.53		"

RECORD OF MAPLE SUGAR SAMPLES, ANALYZED BY INLAND REVENUE DEPARTMENT LABORATORY—*Continued.*

District of Nova Scotia—R. J. Waugh, Inspector—Concluded.

Date of Collection.	Nature of Samples.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Percentage on Dry Substance. Lead Subacetate Precipitate.	Percentage on Dry Substance. Total Ash.	Malic Acid Value.	Remarks.
1907.											
April 26	Maple Sugar....	27317	E. L. Nash, Lunenburg, N. S.	1 lb.,	20c. ...	Moirs, Ltd., Halifax	... .	0.93	0.25	0.35	Adulterated.
May 1	" ...	27318	C. M. Roberts, Parrsboro, N. S.	1 "	15c.....	Amos Hannah, Cumberland Co.	.....	4.93	1.04	.....	Genuine.
" 1	" ...	27319	W. F. Dexter, Parrsboro, N. S.	1 "	18c.....	D. S. Gilbert, Gilbert's Mountain, N. S.	....	3.22	0.66	.....	"
" 1	" ...	27320	S. H. Terris, Springhill, N. S.	1 "	20c.....	J. M. Hunter, Leamington, N. S.	.....	4.33	0.96	.....	"
District of Prince Edward Island—T. Moore, Inspector.											
April 18	Maple Sugar....	28384	Stewart & Son, Charlottetown.	1 lb.,	15c.....	Sugars. Ltd., Montreal....	.....	0.75	0.28	0.20	Adulterated.
" 18	" ...	28385	F. White, Charlottetown..	1 "	20c.....	Unknown....	....	0.27	0.18	0.06	"
" 19	" ...	28386	A. Bowness, Kensington..	1 "	10c.....	F. T. Thomas, Quebec....	Sold as Compound.	4.75	1.04	.....	Sold as Compound.
" 20	" ...	28387	Brace & McKay, Summerside.	1 "	20c.....	Jas. E. Smith, South Brook, N. S.	.....	4.62	1.02	.....	Genuine.
" 20	" ...	28388	McMurdo Bros., Summerside.	1 "	12c.....	Unknown.....	Sold as mixture.	0.15	0.12	.....	Sold as Mixture.
" 24	" ...	28389	D. G. Cameron, Montague Bridge.	.....		F. T. Thomas, Quebec.....	Sold as Compound.	0.13	0.12	.....	Sold as Mixture.
" 24	" ...	28390	T. J. Donahoe, Rosnith....	.....		T. J. Donahoe, Rosnith...	Purchased from mfrs. on premises.	5.44	0.82	.....	Genuine.
" 28	" ...	28391	W. S. Brown, Charlottetown, P.E.I.	1 lb.,	25c.	Thomas Cairns, Shamrock, P.E.I.	... .	0.93	0.48	0.14	Adulterated.
" 28	" ...	28392	Sanderson & Co., Charlottetown, P.E.I.	1 "	20c.....	Allan Rogerson, Gamble's Corner, P.E.I.	Did not sell for pure.	2.11	0.90	.....	Genuine.
" 28	" ...	18393	J. J. Gay & Son, Charlottetown.	1 "	00c.....	H. Sanway, Agent, Charlottetown, P.E.I.	....	1.33	0.40	0.39	Adulterated.

May	1	Maple Sugar....	28394	Mrs. W. F. Carter, Charlottetown, P.E.I.	1 lb., 25c.....	Edward McKenzie, Springhill, N.E.	.....	3.93	1.10	....	Genuine.
"	9	" ...	28395	James Kelly, Charlottetown, P.E.I.	1 " 20c.....	Sugars, Limited, Montreal.	.....	1.89	0.44	0.23	Doubtful.
"	9	" ...	28396	A. Gates & Co., Charlottetown, P.E.I.	1 " 25c.....	John McKinnon, Charlottetown, P.E.I.	.....	3.73	0.66	.....	Genuine.
"	9	" ...	28397	Bur & Goff, Charlottetown, P.E.I.	1 " 24c.....	John McKinnon, Charlottetown, P.E.I.	.....	3.44	0.63	.....	"
"	9	" ...	28398	M. Toole, Charlottetown, P.E.I.	1 " 25c.....	Inconnus.	.....	4.51	0.88	.....	"

District of New Brunswick—J. C. Ferguson, Inspector.

April	8	Maple Sugar....	24346	McPherson Bros., 181 Union St., St. John, N.B.	3 lb., 60c.....	Wilfred Fenwick, City Market, St. John, N.B.	No label on sample....	3.90	0.75	.....	Genuine.
"	9	" ...	24347	M. D. Morrell, N.-E. Corner Main & Durham Sts., St. John, N.B	3 bars, 30c.....	Sugars Co., Limited, Montreal, Que.	Absolutely pure.....	1.00	0.31	.....	Adulterated.
"	9	" ...	24348	W. Alex. Porter, Corner Main & Waterloo Sts., St. John, N.B.	3 " 66c.....	William Fenwick, City Market, St. John, N.B.	No label on sample....	3.82	0.90	.....	Genuine.
"	10	" ...	24349	Chas. A. Clark, 73 Sydney St., St. John, N.B.	3 " 60c. ...	Hudson & Co., North Market St., St. John, N.B.	" ...	3.82	0.93	.....	"
"	23	" ...	24369	N. W. Everleigh & Co., Main St., Sussex, N.B.	3 " 36c.....	B. Hubley, Goshen, N.B. .	"	2.55	0.72	.....	"
"	23	" ...	25370	Sussex Mercantile Co., Ltd., Main St., Sussex, N.B.	3 " 48c. ...	James Beck, Elgin, N.B...	"	2.93	0.72	. ...	"
April	24	Maple Sugar....	24371	A. M. Brown, Main St., Petticodiac, N.B.	3 bars, 36c.....	Stephen Cane, Pleasant Vale, N.B.	No label. Taken from shelf in Vendor's store.	3.95	1.04	.....	Genuine.
"	24	" ...	24372	H. W. Church & Co., Main St., Petticodiac, N.B.	3 " 38c.....	Fred. Colpitts, Pleasant Vale, N. B.	No label. Taken from shelf in Vendor's store.	3.95	1.04	.....	"
"	24	" ...	24373	C. S. Goggin, Main St., Petticodiac, N.B.	3 " 42c.....	Benjamin Prosser, Prosser's Brook, N.B.	No label. Taken from shelf in Vendor's store.	4.77	1.11	.....	.
"	24	" ...	24374	Follansbee & Co., Newcastle, N.B.	3 " 65c.....	Goddard Bros., Elgin, N.B.	No label. Taken from shelf in Vendor's store.	3.55	0.73	.....	"
"	29	" ...	24375	S. Holdengraber, Corner George & King Sts., Bathurst, N.B.	3 " 30c.....	Hudon, Hebert & Co., Montreal.	Pure Maple Sugar, in large letters.	3.26	0.75	.....	"
"	30	" ...	24376	Geo. T. Vernette, Main St., Campbellton, N.B.	3 pkgs., 60.c....	X. Lavallée, St-Jean Port. Joli, Que.	.....	0.32	0.17	0.07	Adulterated.
May	9	" ...	24395	Ganong Bros., Ltd., Water St., St. Stephen, N.B.	3 bars, 66c.....	Goddard Bros., Elgin, N.B.	No label.....	2.53	0.61	.....	Genuine.

RECORD OF MAPLE SUGAR SAMPLES, ANALYZED BY INLAND REVENUE DEPARTMENT LABORATORY.

District of New Brunswick—J. C. Ferguson, Inspector—Concluded.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Percentage on Dry Substance. Lead Subacetate Precipitate.	Percentage on Dry Substance. Total Ash.	Malic Acid Value.	Remarks.
1907.											
May 11	Maple Sugar....	24396	Daniel Linihan, Kings St., Fredericton, N.B.	3 bars,	50c.....	Wm Parent, Bear Island, N.B.	No label.....	4.00	0.75	.....	"
" 11	" ...	24397	Jas. A. Bell, Queen St., Fredericton, N.B.	3¼ lb.,	65c.....	Whinant Cliff, Queensbury, N.B.	.....	3.73	1.01	.....	"
" 13	" ...	24398	H. H. Moxon, Woodstock, N.B.	6 patty pans,	25c.	J. H. McNally, Beechwood, N.B.	No label.....	6 02	1.30	.....	"
" 13	" ...	24399	B. H. Smith & Sons, Woodstock, N.B.	3 bars,	25c.....	Rowell, Son & Co., Sherbrooke, Que.	"	3.17	0.54	.....	"
" 16	" ...	24400	Peter Lagacy, Grand Falls, N.B.	3 "	45c.....	Joseph Caron, Drummond, N.B.	"	6.60	1.43	.....	"
" 16	" ...	29501	A. J. Martin, Grand Falls, N.B.	3½ lb.	.....	Louis Bouchia, Drummond, N.B.	"	7.02	1.33	.....	"
" 16	" ...	29502	J. L. White, Grand Falls, N.B.	4½ lb.,	50c.....	Joseph Goodbout, Drummond, N.B.	"	7.57	1.11	.....	"

District of Quebec—E. Béland, Inspector.

April 4	Maple Sugar ...	26190	Alex. Lessard, St. Joachim.	3 lb.,	24c.....	Alex. Lessard.....	.....	4.24	0.75	.....	Genuine.
" 4	" ...	26192	T. B. A. Paré, St. Joachim.	5¼ "	55c.	T. B. A. Paré, St. Joachim.	.....	4.91	1.23	.....	"
" 4	" ...	26193	Gaudios Fortin, St. Joachim.	3 "	39c.	Gaudios Fortin, St Joachim.	.....	5.77	1.22	.....	"
" 5	" ...	26197	Joseph Gagnon, St. Roch.	2 "	25c.	Unknown	.....	3.95	1.15	.....	"
" 5	" ...	26199	Joseph Falardeau, 268 Roi St., Quebec.	3 "	37c.....	Pierre Renaud.....	.....	4.44	0.83	.....	"
" 8	" ...	26205	T. Julien, 124 Dorchester St., Quebec.	2 "	24c.....	Letourneau, Orleans Island	.....	5.06	0.94	.....	"

"	8	"	...	26206	T. Julien, 124, Dorchester St., Quebec.	2¼	"	22c.....	Tremblay, Château Richer.	....	5.26	1.04	.....	"
"	16	"	..	26201	Edmond Cle'che, St. Marie, Beauce.	3	"	25c.....	Thos. Deblouais, St. Marie, Beauce.	....	4.44	0.84	.....	"
"	16	"	...	26209	Israël Fecteau, St. Maric, Beauce.	4	"	32c.....	Israël Fecteau, St. Marie, Beauce.	....	5.88	1.01	....	"
"	16	"	...	26210	Thos. Champagne, St. Marie, Beauce.	1	"	10c.....	Thos. Champagne, St. Maric, Beauce.	... .	5.06	0.96	.....	"
"	16	"	...	26211	Louis Marcoux, St. Maric, Beauce.	1	"	10c.....	Louis Marcoux, St. Marie, Beauce.	....	5.11	1.01	.....	"
"	16	"	...	26212	Alex. Labé, St. Marie, Beauce.	4	"	32c.....	Alex. Labé, St. Marie, Beauce.	....	6.00	1.04	.....	"
"	17	"	...	26213	Geo. Gagné, St. Elzear, Beauce.	5	"	44c.....	Geo. Gagné, St. Elzear, Beauce.	....	4.80	0.96	.....	"
"	17	"	...	26214	Joseph Dion, St. Elzear, Beauce.	2	"	20c.	Joseph Dion, St. Elzear, Beauce.	....	5.93	1.15	. ...	"
"	17	"	...	26215	Lazare Routhier, St. Elzear, Beauce.	5	"	50c. . ..	Lazare Routhier, St. Elzear, Beauce.	.....	4.33	0.84	.....	"
"	17	"	...	26216	Jos. Sylvain, St. Elzear, Beauce.	3	lb.,	25c.....	Jos. Sylvain, St. Elzear, Beauce.	....	5.66	1.16	....	Genuine.
"	17	"	...	26217	Nazaire Langois, St. Elzear, Beauce.	1	"	10c.....	Nazaire Langlois, St. Elzear, Beauce.	.....	5.37	0.85	.....	"
"	17	"	...	26218	Michel Marcoux, St. Elzear, Beauce.	3½	"	30c..	Michel Marcoux, St. Elzear, Beauce.	....	5.53	0.93	.....	"
"	17	"	...	26219	Jos. Simard, St. Elzear, Beauce.	3	"	25c.....	Jos. Simard, St. Elzear, Beauce.	... .	6.53	1.40	.....	"
"	17	"	...	26220	Narcisse Lachance, St. Elzear, Beauce.	4	"	32c.....	Honoré Breton, St Elzear, Beauce.	.....	6.44	1.44	.....	"
"	30	"	...	26252	Xavier Lavallée, St. Jean Port Joli.	2½	"	20c.	Maxime Morin, St. Jean, Port Joli.	.....	4.57	1.04	.....	"
"	30	"	...	26253	Xavier Lavallée, St. Jean Port Joli.	2½	"	20c.	Gaspard Bois, St. Aubert.	.....	3.88	1.10	.... .	"

District of St. Hyacinthe—J. C. Rouleau, Inspector.

April	16	Maple Sugar....	001	C. B. Dionne, South Durham.	1	lb.,	36c.....	Louis Nadeau, St. Cristine.	....	4.80	0.97	.....	Genuine.
"	17	" ...	002	J. Bédard & Fils, Richmond	3	"	30c.....	B. Ryley, Richmond....	.....	4.20	0.80	.....	"
"	17	" ...	003	McRea, Bros., Richmond..	1¾	"	16c.....	Ed. Seale, Dennissons Mills	....	5.48	1.03	.....	"
"	17	" ...	004	J. Bourque, Windsor Mills	1½	"	45c.....	M. Laporte, Windsor Mills	.....	6.42	1.04	.....	"
"	18	" ...	005	Paul Tourigny, Victoriaville.	4	"	32c.....	Theophil Augers, St. Norbert.	....	4.48	1.17	.....	"
"	18	" ...	006	D.-O. Barbeau, Victoriaville.	4	"	32c.. .. .	D. Roberge, St. Paul de Chester.	.....	4.44	1.02	.....	"
"	19	" ...	007	Aurélien Doyon, Thetford.	4	lb.,	39c.....	R. Doyon, Thetford.	.....	6.73	1.25	.....	Genuine.
"	19	" ...	008	Talbot & Larose.....	3	"	30c.....	John C. Reed, Lameturier, Que.	....	4.80	1.00	.....	"
"	20	" ...	009	H. J Johnston, Minton. ..	3	"	15c.....	Vendor.....	.....	4.80	1 21	.....	"

RECORD OF MAPLE SUGAR SAMPLES, ANALYZED BY INLAND REVENUE DEPARTMENT LABORATORY—*Continued.*

District of St. Hyacinthe—J. C. Rouleau, Inspector—Concluded.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Percentage on Dry Substance. Lead Subacetate Precipitate.	Percentage on Dry Substance. Total Ash.	Malic Acid Value.	Remarks.
1907.											
April 20	Maple Sugar	010	Fortunal Denis, Martinville.	7 lb.,	14c.	Vendor		6.26	1.25		"
" 20	"	011	H. R. Slack, North-Hatley.	5¼ "	48c.	"		4.73	0.88		"
" 22	"	012	F. Desmarais, St. Liboire.	2 block,	30c.	"		1.95	0.42	0.27	Doubtful.
" 24	"	013	Maple Tree Producers Assoc., Waterloo, Que.	3 "		"		3.28	0.67		Genuine.
" 27	"	014	A. Mandeville, Contrecœur.	0 "	15c.	"		2.60	0.75		"
" 27	"	015	Ulric Labossière, St. Ours.	4 lb.,	40c.	"		4.24	0.97		"
" 27	"	016	Louis Laperle, St. Ours.	2 14-16 lb.,	25c.	"		3.42	0.74		"
" 27	"	17	J. E. Lamoureux, Contrecœur.	2 block,	35c.	"	Maple Leaf mould on blocks.	4.28	1.11		"
" 30	"	18	A. O. Stuart, Napierville.	5 lb.,	50c.	N. Fortin, Napierville.	No Label.	1.46	0.56	0.25	Adulterated.
" 30	"	19	A. Le Blanc et Cie, Napierville.	2¾ "	28c.	D. Morin, Napierville.	"	4.88	0.91		Genuine.
May 11	"	20	Jos. Chartier, St. Hyacinthe.	3 block,	17c.	Vendor	"	4.26	1.06		"

District of Montreal—J. J. Costigan, Inspector.

April 3	Maple Sugar	31661	Broulette & Guay, 77, University St.	4 cakes,	50c.	Jno. Caldwell & Co., 173 McGill St., Montreal.	Sold as pure	2.40	0.84		Genuine.
" 3	"	31662	A. Bowes & Co., 211 McGill, Montreal.	4 "	40c.	Chas-E. Wilson, Dirnboro, Que.	"	3.08	0.77		"
" 12	"	31663	Canada Maple Exchange, 618 Beaudry St., Montreal.	3 tins,	45c	Vendor	Sold as pure, sample taken from stock.	2.77	0.67		"

"	16	"	...	31664	E. Brais, 743 St. Lawrence St., Montreal.	2 lb., 25c.	A. Desautels, St. Hilaire, Que.	Guaranteed pure.....	3.77	1.00	.....	"
"	17	"	..	31665	Leduc et Frere, Valleyfield, Que.	1 block, 28c.....	J. Thibault, Franklin, ...	Sold as pure.....	4.44	1.00	.....	"
"	17	"	...	31666	Richer & Daoust, Valleyfield.	1 " 25c.....	Not known.....	"	6.40	1.46	.....	"
"	17	"	...	31667	Daignault Frères, Valleyfield.	2 lb., 27c.....	N. Laberge.....	"	3.55	0.94	.....	"
"	18	"	...	31668	N. Massicotte, Joliette, Que.	1 block, 18c.....	.....	.....	4.28	1.00	.....	"
"	18	"	...	31669	Malo Bros., Joliette, Que..	1 " 30c.....	.....	.....	6.11	1.41	....	"
"	18	"	...	31670	C. Barette, Joliette, Que ..	3 block, 34c.....	Joseph DeBlois, Sainte-Elizabeth.	.....	3.28	0.66	.....	"
"	18	"	...	31671	C. Barette, Joliette, Que.	1 block, 20c.....	A. Savignac, Ste. Elizabeth.	.....	5.00	0.97	.....	"
"	19	"	...	31672	Uldéric Desautels, St. Hilaire.	3 blocks, 30c....	Vendor.....	.....	4.40	1.10	.....	"
"	19	"	...	31672	Michel Bordua, St. Charles, Richelieu.	1 block, 20c.....	"	.....	3.95	0.80	.....	"
"	23	"	..	31674	Pringle, Stark & Co., Huntingdon, Que.	3 cakes, 37c.....	John Hinks, Powers-Court.	.....	4.46	0.95	....	"
"	23	"	...	31675	E. C. McCoy, Huntingdon, Que.	1 cake, 33c.....	Robert Withal, New-Ireland.	.....	4.42	1.25	.....	Genuine.
"	23	"	...	31676	A. Chalmers, Huntingdon, Que.	1 " 30c....	Not given.....	.....	5.35	1.23	.....	"
"	26	"	...	31677	W. J. Falle, St. Antoine, Market, Montreal.	1 block, 26c.....	Gunn & Langlois, Montreal.	.....	5.40	1.13	.....	"
"	26	"	...	31678	N. Deschênes, St. Antoine Market, Montreal.	1 " 27c.....	Gunn & Langlois, Montreal.	.....	5.26	1.08	.....	"
"	26	"	...	31679	Gunn & Langlois, St. Paul, Montreal.	1 " 30c.....	Hébert & Guertin, St. Charles.	.....	4.02	0.80	.....	"
"	26	"	...	31680	Gunn & Langlois, St Paul, Montreal.	1 " 20c.. ...	Avila Gravel, St. Felix.. .	.....	6.26	1.33	.....	"

District of Ottawa;—E. Belisle, general Inspector, and A. E. Sanderson, Inspector.

April	9	Maple Sugar....	32359	D. J. Gillies, Cornwall....	2 cakes, 20c.....	Sugars, Limited, Montreal.	Pure Maple Sugar label.	0.94	0.32	0.10	Adulterated.
"	9	" ...	32361	G. W. Armstrong, Cornwall.	3 " 30c...	Hart & Tuckwell, Montreal.	.. ..	3.51	0.77	.....	Genuine.
"	15	" ...	32367	Paul Bova, Bank St., Ottawa.	2 " 20c...	Not known..	....	3.33	0.88	.....	"
"	15	" ...	32366	A. Wackid, Bank St., Ottawa.	2 " 20c...	Sugars, Limited, Montreal.	Absolutely Pure Label	1.11	0.30	0.98	Adulterated.
"	15	" ...	32370	Mrs. Blackburn, Metcalfe St., Ottawa.	2 " 20c...	Sugars, Limited, Montreal.	" "	2.04	0.53	0.50	Genuine.
"	15	" ...	32372	Kavanagh Bros., Sparks St., Ottawa.	2 " 20c...	Hall, Barnstown.....	Guaranteed pure by the manufacturer.	4.06	0.93	...	"

RECORD OF MAPLE SUGAR SAMPLES, ANALYZED BY INLAND REVENUE DEPARTMENT LABORATORY.

District of Ottawa—E. Belisle, general Inspector, and A. E. Sanderson, Inspector—Concluded.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Pencentage on Dry Substance. Lead Subacétate Precipitate.	Pencentage on Dry Substance. Total Ash.	Malic Acid Value.	Remarks.
1907.											
April 15	Maple Sugar....	32374	Bate & Son, Sparks St., Ottawa.	2 cakes,	20c.....	Maple Tree Producers Assoc., Waterloo, Que.	Pride of Canada, Absolutely Pure.	4.02	0.90	.....	Genuine.
" 15	" ...	32378	Bryson, Graham & Co., Sparks St., Ottawa-	2 "	20c...	Not nown	.....	3.55	1.00	.....	"
" 27	" ...	32220	John Boyle, Alexandria, Ont.	1 lb.,	10c	"	Sold as Maple Sugar..	5.33	1.21	.....	"
" 27	" ...	32221	Doyle Bros. & Co., Alexandria, Ont.	2 "	18c.....	J. J. McDonald, Alexandria, Ont.	" " ..	3.88	0.77	.....	"
" 27	" ...	32222	F. & H. Banford, Hawkesbury, Ont.	1 "	12c.....	Not known.....	" " ..	4.66	1.07	.....	"
" 29	" ...	33223	Michael Duffy, Aylmer, Que	3 cakes,	30c...	"	" " ..	1.20	0.34	0.12	Adulterated.
" 29	" ...	32224	C. P. Wright, Aylmer, Que.	2 "	30c...	J. G. Whyte, Rideau St., Ottawa.	" " ..	0.63	0.27	0.06	"
" 29	" ...	32225	F. Soulière, Aylmer, Que..	3 "	30c...	Sugars, Limited, Montreal.	" " ..	2.20	0.52	.... .	Genuine.
May 7	" ...	32226	Louis Raymond, Hull, Que.	3 "	30c...	Fre dman (Market), Ottawa.	" " ..	3.11	0.77	.....	"
" 8	" ...	32227	A. Villeneuve, Gatineau Point.	3 "	30c...	J. G. Whyte, Ottawa.....	" " ..	3.73	0.84	.....	"
" 8	" ...	32228	A. J. Smith, Gatineau Point.	3 "	30c...	J. G. Whyte, Ottawa	" " ..	0.71	0.24	0.04	Adulterated.
" 8	" ...	32229	Mrs. L. Champagne, Gatineau Point.	3 "	30c...	J. G. Whyte, Ottawa.....	" " ..	0.88	0.31	0.22	Adulterated.
" 13	" ...	32230	J. Bambrick, 50 George St., Ottawa.	2¾ lb.,	35c..	J. D. McGregor.....	" " ..	3.04	0.81	.....	Genuine.
" 13	" ...	32231	J. M. Dowdall, 237 Rideau St., Ottawa.	1 cakes,	10c...	Sugars, Limited, Montreal.	" " ..	1.48	0.40	0.40	Adulterated.

District of Kingston—Jas. Hogan, Inspector.

April	2	Maple Sugar....	31075	Franklin Clow, Earl St., Kingston.	1½ lb., 30c ...	Maple, Limited, Montreal.	Sold as maple flavour..	0.40	0.23	0.21	Sold as maple flavour.
"	2	" ...	31080	C. S. Litton, Alfred St., Kingston.	1½ " 30c	Sugars, Limited, Montreal		1.07	0.30	0.48	Adulterated.
"	2	" ...	31082	F. Ostler, Johnston St., Kingston.	1½ " 30c	Robertson Nicolle, Kingston.		1.21	0.39	0.07	"
"	2	" ...	31090	J. Kelley, Princess St., Kingston.	1½ " 30c.....	Sugars, Limited, Montreal		1.15	0.31	0.21	"
"	3	" ...	31092	H. E. Fairfield, Front St., Belleville.	1½ " 30c ..			1.09	0.36	0.26	"
"	3	" ...	31095	A. J. McCrodan, Front St., Belleville.	1½ " 30c	J. Sloan, Belleville.....		0.94	0.25	0.10	"
"	3	" ...	31097	Wallbridge & Clark, Front St., Belleville.	1½ " 30c.....	"		0.91	0.31	0.09	"
"	3	" ...	31099	H. Harker, Front St., Belleville.	1½ " 30c.....			0.81	0.32	0.27	"
"	3	" ...	32401	G. Pearson, Front St., Belleville.	1½ " 30c.....			0.81	0.34	0.07	"
"	3	" ...	32403	John Panter & Son, Belleville, Ont.	1½ " 30c.....			1.05	0.32	0.08	"
"	3	" ...	32404	J. H. P. Young, Front St., Belleville.	1½ " 30c.....			1.16	0.34	0.14	"
"	4	" ...	32406	T. A. Fisher, William St., Lindsay.	1½ " 30c.....			0.81	0.31	0.23	"
"	4	" ...	32410	Adams Bros., Kent St., Lindsay.	1½ " 30c ...			2.73	0.75	.....	Genuine.
"	4	" ...	32412	A. Primeau, Kent St., Lindsay.	1½ " 30c			0.78	0.26	0.16	Adulterated.
"	4	" ...	32420	A. W. Lockhart, George St., Peterboro.	1½ " 30c. .. .	..		0.63	0.23	0.06	"
		Maple Sugar....	32423	R. A. Dutton, George St., Peterboro.	1½ lb., 30c			0.23	0.15	0.30	Adulterated.
"	4	" ...	32426	W. J. Routley, Charlotte St., Peterboro.	1½ " 30c.....	Sugar, Limited, Montreal.		1.48	0.45	0.20	"
"	5	" ...	32433	J. Sutherland, George St., Peterboro.	1½ " 30c.... .	" " ..		2.40	0.57	.....	Genuine.
"	5	" . .	32436	J. R. Bell, Hunter St., Peterboro.	1½ " 30c ..	" " ..		1.07	0.42	0.13	Adulterated.

1907. *District of Toronto—H. J. Dager, Inspector.*

May	8	Maple Sugar....	33222	W. Eddy, Toronto.....	1 lb., 10c.....	.....	Labeled Pure Maple Sugar.	2.77	0.53	.....	Genuine.
"	8	" ...	33223	Spencer Smith, Toronto...	2 " 30c.....	Farmer at Smith's Falls...		4.77	1.22	.....	"
"	8	" . .	33224	Joseph Patterson, Toronto.	3 " 30c.	Sugars, Ltd., Montreal....		2.20	0.55	.....	"
"	8	" ...	33225	J. J. Burton, Toronto.....	1½ " 30c.....	J. Sloan & Co., Toronto...	Sloans Pure, Quebec...	2.86	0.66	....	"

RECORD OF MAPLE SUGAR SAMPLES, ANALYZED BY INLAND REVENUE DEPARTMENT LABORATORY—*Continued.*

District of Toronto—H. J. Dager, Inspector—Concluded.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Percentage on Dry Substance. Lead Subacetate Precipitate.	Percentage on Dry Substance. Total Ash.	Malic Acid Value.	Remarks.
1907.											
" 9	" ...	33226	J. A. Sweet, Toronto.	2½ "	30c.....	Clems Bros., Agents, Toronto.	.....	2.80	0.71	.. ..	Genuine.
" 9	" ...	33227	Jno. Coutts, Toronto.....	2 "	30c.	Sugars, Ltd., Montreal.. ..	Absolutely pure.....	1.44	0.48	0.29	Adulterated.
" 10	" ...	33228	Geo. Coles, Ltd., Toronto..	2½ "	50c.....	Geo. Coles, Ltd., Toronto..	Sold as pure....	5.64	1.23	.....	Genuine.
" 10	" ...	33229	Frank Giles, Toronto.....	2½ "	35c.....	Pierce, Delta. Ont., near Brockville.	Guaranted pure.....	4.17	0.93	.....	"
" 10	" ...	33230	W. S. Fry & Co., Toronto.	1½ "	22c.....	E. D. Rothwell, Quebec...	Guaranteed pure.....	4.17	1.11	.... .	"
" 17	" ...	33231	W. J. Snell, East Toronto.	2 "	30c.	H. P. Echerdt, agents, Toronto.	Purchased from manufacturer in 5 gal. tin.	2.53	0.68	.....	"
" 20	" ...	33232	Battrem & Co., Hamilton..	2 "	30c.... .	L. Chaput, Son & Co..	.....	5.28	0.98	.....	"
" 20	" ...	33233	Bain & Adams, Hamilton..	2 "	30c.....	Maple Tree Producers Association.	.....	3.68	1.20	.....	"
" 20	" ...	33234	P. H. Gage, Hamilton	2 "	30c.....	Sugars, Ltd., Montreal....	Guaranteed pure.....	0.79	0.29	0.06	Adulterated.
" 20	" ...	33235	Peeble's Hobson & Co., Hamilton.	2 "	30c.	W. L. Sager, Frelighsburg, Que.	.....	3.35	0.87	.....	Genuine.
" 20	" ...	33236	W. J. O'Brien, Hamilton..	1½ "	20c.. ..	Imperial Syrup Co., Montreal.	.....	1.80	0.62	. ....	Doubtful.
" 21	" ...	33237	J. B. O'Neil, Hamilton....	2 lb.,	30c.....	Sugars, Ltd., Montreal....	....	1.95	0.50	.....	"
" 21	" ...	33238	Wm. Carroll, Hamilton...	1½ "	20c.....	Imperial Syrup Co., Montreal.	.. . .	2.97	0.71	.....	Genuine.
" .	" ...	33239	H. C. Davis, Dundas.....	2 "	30c.....	Sugars, Ltd., Montreal....	.....	1.34	0.43	0.34	Adulterated.
" .	" ...	33240	C. Boyle, Dundas.....	2 "	30c.....	" "	. ...	1.49	0.53	0.11	"
" .	" ...	32241	N. Arnold, Hamilton.....	1½ "	30c.....	Balfour & Co., Hamilton..	.....	1.26	0.41	0.23	"
			District of London—T. Kidd, Inspector.								
April 20	" ...	30314	Peter Dill, Seaforth.....	1½ lb.,	20c.....	Jno. Stone & Co., Toronto.	....	0.99	0.34	0.04	Adulterated.
" 20	" ...	30315	Oscar Neil, Seaforth	1½ "	20c ...	Stratford Wholesale Grocers Co.	....	2.80	0.77	.....	Genuine.

"	23	"	...	30316	R. Mount Joy & Son, London, Ont.	2	"	20c	A. M. Smith, London.....	.....	3.84	0.54	... . Genuine.
April	23	Maple Suga..r..		30319	W. Anderson, Chatham...	1½	"	20c.....	Montreal Sugar Co., Montreal.	.....	0.99	0.34	0 04 Adulterated.
"	25	"	...	30323	Geo. H. Varrin, Windsor..	1½	"	20c.....	Imperial Maple Sugar Co., Montreal.	.....	2.26	0.74	..... Genuine.
"	25	"	...	30325	Jno. O. Cheyne, Windsor.	1½	"	20c.....	A. M. Smith & Co., London, Ont.	.....	1.24	0.41	0.16 Adulterated.
"	26	"	...	30327	Reeks & Co., St. Thomas..	2	"	20c.....	Lucas Steel & Bristol, Hamilton, Ont.	....	1.20	0.37	0.34 "
"	26	"	. .	30330	J. A. McCauce, St. Thomas.	1½	"	20c.. ..	J. J. Steele, St. Thomas, Ont.	....	2.49	0.80	..... Genuine.
May	1	"	...	30332	A. J. Nichols, Wingham ..	2	lb.,	20c.....	John Garven, London.....	.....	2.95	0.80	... .. Genuine.
"	1	"	...	30334	Jos. J. Prichard, Harrison.	2	"	20c.....	John Stone, Toronto . ..	....	1.03	0.30	0.09 Adulterated.
"	2	"	...	30337	Geo. Strothers, Walkerton.	2	"	20c.....	T. B. Escott, London.....	.....	2.04	0.61	..... Genuine.
"	2	"	...	30341	Schreindt & Mutter, Hanover.	2	"	20c	Unknown.....	.....	0.86	0.40	0.04 Adulterated.
"	3	"	...	30344	Haleday & Stenson, Chesley.	2	"	20c.....	"	....	0.97	0.33	0.05 " Genuine.
"	3	"	...	30346	R. A. Climie, Listowel....	2	"	20c.....	Geo. Watts & Sons, Brantford.	....	2.28	0.61	..... "
"	4	"	...	30348	A. Beatter & Co., Stratford.	"		30c.	Maple Tree Preducers Co., Waterloo, Que.	.....	3.28	0.78	..... "
"	8	"	...	30350	J. A. McCrea & Son, Guelph.	2	"	30c.....	Hugh Walker & Son, Guelph.	.....	3.22	0.84	..... "
"	10	"	...	30355	G. M. Woods, Church St., Toronto.	2	"	20c.....	Unknown.....	.....	3.02	0.68	..... "
"	10	"	...	30359	H. Wellstead, Toronto....	2	"	20c.....	Perkins, Jones & Co., Toronto.	....	2.22	0.58	..... "
"	13	"	...	30362	T. J. Clifton, Toronto.....	2	"	20c.....	Clens Bros., Toronto..	....	2.31	0.61	..... "
"	13	"	...	30366	W. J. Colwell.....	1½	"	20c.	Dixon Bros., Hamilton, Ont.	.....	3.84	0.91	..... "
"	14	"	...	30367	J. J. McKnight, Tottenham.	2	"	20c.	John Slone, Toronto	.. ..	2.44	0.55	..... "

District of Manitoba—R. W. Earl, Inspector.

May	16	Maple Sugar....		25851	T. Minello, Winnipeg.....	3	cakes,	15c...	Bright & Johnson, Winnipeg.	....	2.95	0.77	.... Genuine.
"	16	"	...	25852	D. Black, Winnipeg.....	3	"	15c...	Telfer Bros., Winnipeg....	....	0.24	0.11	0.04 Adulterated.
"	16	"	...	25853	Thos. Hurtley & Co., Winnipeg.	3	"	15c...	Not given.....	....	0.29	0.14	0.04 "
"	16	"	...	25854	J. G. Hargrave, Winnipeg.	3	"	30c...	Bright & Johnson, Winnipeg.	....	2.58	0.85	..... Genuine.
"	16	"	...	25855	M. Valentine, Winnipeg..	3	"	15c...	Telfer Bros., Winnipeg....	....	0.78	0.38	0.29 Adulterated.

RECORD OF MAPLE SUGAR SAMPLES ANALYZED BY INLAND REVENUE DEPARTMENT LABORATORY.

District of Manitoba—R. W. Earl, Inspector—Con.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer of Furnisher as given by Vendor.	Inspector's Report.	Percentage on Dry Substance. Lead Subacetate Precipitate.	Percentage on Dry Substance. Total Ash.	Malic Acid Value.	Remarks.
1907.											
May 17	Maple Sugar	25856	J. R. Van Norman, Winnipeg.	3 lb.,	60c	Maple Tree Producers Assoc., Waterloo, Que.		3.62	0.88		Genuine.
" 17	"	25857	Finch & Co, Winnipeg	1½ "	30c	Eastern Townships, Maple Sugar Assoc.		3.66	1.08		"
" 17	"	25858	J. R. Clement, Winnipeg	2 "	40c	Jobin Marrin & Co., Winnipeg.		3.16	0.85		"
" 17	"	25859	J. A. Parks, Winnipeg	3 lb.,	75c	Small, Montreal		2.07	0.64	0.28	"
" 17	"	25860	J. A. McKercher, Winnipeg	2½ "	40c	Taylor, Quebec		3.66	1.26		"
" 27	"	25865	Mrs. Taylor, Portage la Prairie.	1¼ "	15c	Not given		6.61	1.55		"
" 27	"	25866	C. Costigan, Portage la Prairle.	3 cakes.,	15c	Bright & Johnson, Winnipeg.		3.84	1.24		
" 27	"	25867	D. Cassel, Portage la Prairies.	3 "	25c	Telfer Bros., Winnipeg		0.18	0.13	0.07	Adulterated.
" 27	"	25868	A. H. Palmer, Portage la Prairie.	3 "	30c	Not known		2.95	0.13		Genuine.
" 27	"	25869	J. Costigan, Portage la Prairie.	3 "	15c	Bright & Johnson, Winnipeg.		3.24	0.70		"
" 22	"	25861	Martin & Johnson, Brandon.	3 "	30c	Wilson Com. Co., Brandon		2.33	0.73		"
" 23	"	25862	J. F. Price & Co., Brandon	3 "	30c	Maple Tree Producers Assoc., Waterloo, Que.		4.55	1.03		"
" 23	"	25863	Smith & Burton	3 "	25c	E. J. Lee, Sutton, Que		3.71	1.11		"
" 23	"	25864	T. E. Cornes, Brandon	3 "	30c	Wilson Com. Co., Brandon		0.48	0.33	0.29	Adulterated.
" 28	"	25870	R. J. Hopper	3 "	30c	C. R. & A. J. Kimckey, Sutton, Que.		2.97	0.97		Genuine.

District of Calgary—R. W. Fletcher, Inspector.

May	9	Maple Su ar.. .	28701	J. G. Pratt, Lacombe.....	20 ounces, 45c..	Plunket & Savage, Calgary.	....	3.55	0.81	.....	Genuine.
"	11	" ...	28702	R. Bruce Inglis Co., Edmonton.	1½ lb., 40c.....	N. J. Cluff, Strathcona ...	... ...	2.84	0.80	.....	"
"	11	" ...	28703	Hudson Bay Co., Edmonton.	1½ " 30c.....	Maple Tree Producers Assoc., Waterloo, Que.	....	4.11	0.80	...	"
"	13	" ...	28704	The Acme Co., Edmonton.	3 " 75c.....	" " ..	.....	2.80	0.73	.....	"
"	13	" ...	28705	Duncan Bros. & Batters, Edmonton.	3 tins, 75c	" " ..	. .. .	2.71	0.73	.....	"
"	13	" ...	28706	Hallier & Aldridge, Edmonton.	45 ounces, 75c...	" " ..	....	4.35	0.83	.....	"
"	13	" ...	28707	Matheson & Jacobson, Edmonton.	1½ lb., 30c	" " ..	....	4.33	0.80	.....	"
"	13	" ...	28708	J. H. Morris & Co., Edmonton.	1½ " 30c.....	" " ..	... .	2.88	0.85	....	"
"	13	" ...	28709	W. Wilkins, Edmonton....	18 ounces, 30c...	McCormick, London, Ont.	... .	2.90	0.67	. ....	"
"	14	" ...	28710	Carrothers & Co., Edmonton.	1½ " 30c...	Maple Tree Producers Assoc., Waterloo, Que.	....	3.80	0.85	.....	"
"	14	" ...	28711	A. G. Baahm, Strathcona..	14 " 45c...	Unknown	....	0 97	0.38	0.19	Adulterated.
"	14	" ...	28712	Baxter & Co., Strathcona..	1 lb., 30c.....	E. J. Berry, Brome, Que..	....	2.68	0.73	.....	Genuine.
"	14	" ...	28713	Ross McDonald, Strathcona.	1½ " 45c...	Unknown	.....	3.02	0.66	.....	"
"	22	" ...	28714	L. T. Newburn & Co., Calgary.	1½ " 20c .	Sugars Co., Limited, Montreal.	....	0.26	0.18	0.10	Adulterated.
"	22	" ...	28715	G. T. & J. Galt, Calgary..	1½ 25c	Sugars Co., Limited, Montreal.	.. ..	0.93	0.31	0.14	"
May	22	Maple Sugar....	28716	Wood & Green, Calgary...	2 lb., 40c	B. G. Hall, Barnstown, Que.	....	3.48	0.77	....	Genuine.
"	22	" . .	28717	Wing & Kidney, Calgary..	1½ " 30c	G. F. & J. Galt, Calgary..	....	0.82	0.33	0.07	Adulterated.
"	22	" ...	28718	Hudson Bay Co., Calgary.	1½ " 30c	Maple Tree Producers Assoc.. Waterloo, Que.	.....	3.66	1.02	.....	Genuine.
"	22	" ...	28719	Copas & Emerson, Calgary.	1½ " 30c. ...	Unknown	.....	3.40	0.66	....	"
"	22	" ...	28720	Murdock Bros., Calgary...	1½ " 30c	G. F. & J. Galt, Calgary..	... .	0.53	0.23	0.06	Adulterated.

District of British Columbia—E. B. Parkinson, Inspector.

April	15	Maple Sugar....	32024	H. J. Hampton, Granville St., Vancouver.	1 lb., 20c.....	Eastern Townships Maple Sugar & Syrups Exchange, Sutton, Que.	Guaranteed pure.....	3.04	0.77	....	Genuine.
"	19	" . .	32064	Geo. Smith, Mount Pleasant, Vancouver.	1 " 20c.	Maple Tree Producers Assoc., Ltd., Waterloo, Que.	Pride of Canada, Absolutely Pure.	5.24	1.06	.....	"

14—5

RECORD OF MAPLE SUGAR SAMPLES ANALYZED BY INLAND REVENUE DEPARTMENT LABORATORY—*Concluded.*

District of British Columbia—E. B. Parkinson, Inspector—Concluded.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Percentage on Dry Substance. Lead Subacetate Precipitate	Percentage on Dry Substance. Total Ash.	Malic Acid Value.	Remarks.
1907.											
April 19	Maple Sugar....	32065	Andrews Bros., Mount Pleasant, Vancouver.	1 lb.,	15c.....	Sugars, Ltd., Montreal....	"Twin Blocks," Guaranteed Pure.	3.15	0.64	.....	Genuine.
" 20	" ...	32066	Wm. Clark, Carroll St., Vancouver.	1 "	15c.....	" "	" " ..	1.97	0.50	0.32	Doubtful.
" 22	" ...	32067	Woodwards Dept. Stores, Hastings St., Vancouver.	1 "	15r.	" "	" " ..	1.82	0.47	0 34	"
" 22	" ...	32068	Foran Bros., Carroll St., Vancouver.	1 "	15c... .	" "	" " ..	2.00	0.51	0.73	Genuine.
" 23	" ...	32069	A. G. Main, Hastings St., Vancouver.	1 "	15c.....	" "	" " ..	3.11	0.54	.....	"
" 23	" ...	32070	N. Ray, Hastingst St., Vancouver.	1 "	15c.	Sugars, Ltd., Montreal ...	"Twin Blocks," Guaranteed Pure.	2.33	0.55	.....	Genuine.
" 23	" ...	32071	B. B. Brown, Davis St., Vancouver.	1 "	15c.....	" "	" " ..	2.61	0.54	...	"
" 23	" ...	32072	A. H. Bradbury, Vancouver.	1 "	15c.....	" "	" " ..	2.17	0.50	.....	"
" 24	" ...	32073	O. Burdett, New Westminster, B. C.	1 "	15c.....	" "	" " ..	1.88	0.47	.....	Doubtful.
" 25	" ...	32074	F. Islander, Pender St., Vancouver.	1 "	15c.....	" "	" " ..	1.85	0.52	0.29	"
" 25	" ...	32075	Nickles & Landwo, Grainville St., Vancouver.	1 "	15c.....	Geo. Valala, Vancouver...	....	2.13	0.46	.....	"
" 25	" ...	32076	C. E. Peck, Grainville St., Vancouver.	1 "	15c.....	Sugars, Ltd., Montreal....	"Twin Blocks," Guaranteed pure.	2.15	0.48	.....	"
" 25	" ...	32077	Geo. Valala, Grainville St., Vancouver.	1 "	15c.....	Vendor..	Vendor stated sample was not pure after purchase was made.	1.08	0.51	0.09	Sold as Mixture.
" 26	" ...	32078	M. M. Lemon, Fairview, Vancouver.	1 "	10c. ...	Unknown.....	... .	3.95	0.66	....	Genuine.

"	27	"	...	32079	Griggs Bros., Ebume, B. C.	3¼	"	15c.	Ramsay Bros., Vancouver, B. C.	Marked Maple Sugar on boxes.	5.15	0.81	....	"	
"	27	"	...	32080	City Grocery, Granville St., Vancouver.	1	"	15c.	Maple Tree Producers Assoc., Ltd., Waterloo, Que.	Pride of Canada, Absolutely Pure.	4.53	0.88			
"	29	"	...	32081	Ramsay Bros., Powell St., Vancouver.	¾	"	20c.	Vendor.	Marked Maple Sugar on boxes.	6.42	1.18	...	"	
"	29	"	...	32082	S. T. Wallace, Western Ave., Vancouver.	1	"	20c.	Maple Tree Producers Assoc., Ltd., Waterloo, Que.	Pride of Canada, Absolutely Pure."	5.11	0.81	...	"	

APPENDIX G.

BULLETIN No. 141—MAPLE SYRUP

OTTAWA, July 31, 1907.

W. J. GERALD, Esq.,
Deputy Minister of Inland Revenue.

SIR,—I have the honour to report to you upon an examination of 244 samples of Maple Syrup, collected by our Food Inspectors during April and May of this year. The following synopsis shews the results of analysis:

Inspection District.	Genuine	Doubtful.	Maple Flavour	Mixture or Compound.	Adulterated.	Total.
Nova Scotia	17	0	1	1	1	20
P. E. Island	3	0	0	1	0	4
New Brunswick	18	1	0	0	1	20
Quebec	20	0	0	0	0	20
St. Hyacinthe	20	0	0	0	0	20
Montreal	20	0	0	0	0	20
Ottrwa	15	0	0	2	3	20
Kingston	7	0	3	8	2	20
Toronto	9	0	3	4	4	20
London	12	1	0	0	7	20
Manitoba	18	0	1	0	1	20
Calgary	18	0	1	0	1	20
British Columbia	8	0	7	5	0	20
	185	2	16	21	20	244

Maple syrup has been made the subject of examination on six different occasions during the past eleven years. The work done in 1896 had for its object the special case of glucose substitutes for maple syrup; the other collections were studied with with reference to substitution of any foreign substance for true maple syrup. The following table gives a resumé, of the results obtained.

Date.	Bulletin	Genuine	Doubtful.	Adulterated.	Sold as Compound.	Total.
July 1896	45	82	8	6	0	96
March 1905	102	17	4	76	0	97
May 1905	102	44	2	29	0	75
March 1906	120	22	2	53	8	85
May 1906	120	88	17	57	9	171
May 1907	141	185	2	20	37	244

It will be noted that the proportion of adulterated samples is much greater for March 1905 and 1906, than for May of the same years. Expressed as percentage numbers, this fact becomes more striking:

	Percentage of	
	Genuine Samples.	Adulterated Samples.
March 1905	18	78
May 1905	59	38
March 1906	26	62
May 1906	51	33
May 1907	77	8

It is, of course, to be expected that a large proportion of genuine maple syrup samples should be obtainable immediately after the season of manufacture, than at a later period. It is interesting to note that the fact of inspection appears to have had a beneficial effect upon the character of maple syrup sold in Canadian markets. Comparing the percentages of genuine samples found in May of 1905, 1906 and 1907, we have the numbers, 59, 51 and 77; the adulterated samples reported for the same periods are 38, 33 and 8 per cent. respectively. Greater care is taken to label artificial maple products, as mixtures or compounds, or as merely flavoured articles.

The work herein recorded has been done by Mr. Valin; and I am able to vouch for the care taken in its performance.

I beg to recommend the publication of this report as Bulletin 141.

I have the honour to be,
Sir,
Your obedient servant,

A. McGILL,
Acting Chief Analyst.

MEMORANDUM.

Maple syrup is the product of the evaporation of the juice or sap of the maple tree to a consistency in which about 28 to 36 per cent. of its weight is water. As far as its solids are concerned, the composition of maple syrup is identical with that of maple sugar.

Of the 20 samples found adulterated, in the present collettion, the adulterant seems to be, without exception, granulated sugar.

The same standard as for maple sugar have been adhered to in judging maple syrup in this bulletin. Description of the method for the detection of the adulteration in maple products will be found in Bulletin No. 140.

On the assumption that a syrup contains 35 per cent. water, the factors are 30·77 for Lead subacetate precipitate and 15·4 for total ash. The determination of the water content in 40 samples of maple syrup gave a maximum of 37·70, and a minimum of 29·05, mean 33·74.

The same conclusion has been reached by C. H. Jones, Chemist, Vermont Experiment Station (Report 1905, p. 330).

A. VALIN.

RECORD OF MAPLE SYRUP SAMPLES ANALYZED BY INLAND REVENUE DEPARTMENT LABORATORY.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspection's Report.	Percentage on Dry Substance. Lead Subacetate Precipitate.	Percentage on Dry Substance. Total Ash.	Malic Acid Value.	Remarks.
1907.			*District of Nova Scotia—R. J. Waugh, Inspector.*								
April 18	Maple Sugar.....	27346	J. J. Skerry, Halifax, N. S.	1 can,	30c.....	Imperial Syrup Co., Montreal, Que.	Sold as Maple Syrup. Labeled Maple Flavored Syrup.	0.24	0.27	.....	Sold as Maple Flavor.
" 19	"	27347	T. Lapierre, Halifax, N. S.	2 "	45c.....	Archer Maple Cane Syrup Co., St. John, N. B.	Sold as Maple Syrup. Labeled Archers Maple Syrup.	0.49	0.10	.....	Sold as Maple Cane Table Syrup.
" 22	"	27348	De Wolfe et Lamont, Kentville, N. S.	2 bots.,	40c. ..	Josiah Corkum, North River Road, N. S.	Sold as Country Made Syrup.	3.32	0.86	. ...	Genuine.
" 22	"	27349	Dodge & Co., Windsor, N. S.	1 pt.,	25c.....	D. K. Gilbert, Gilbert's Mountain, N. S.	Sold as pure.	2.76	0.67	.....	"
May 1	"	27350	C. M. Roberts, Parrsboro N. S.	1 "	25c.....	Wm. Henwood, Newville, N. S.	Sold as pure.	3.75	0.90	.....	"
" 2	"	27351	A. G. Purdy, Springhill, N. S.	1 "	20c.....	Gordon Gilroy, Leamington, N. S.	"	4.09	0.83	.....	"
" 2	"	27352	H. J. Smith, Springhill, N. S.	1 "	15c.....	J. W. Hunter, Leamington, N. S.	"	3.44	0.84	....	"
" 2	"	27353	Rodger & Soley, Springhill, N. S.	1 "	15c.....	Unknown.....	"	3.53	0.81	...	"
" 6	"	27354	D. McLaughlin. Parrsboro, N. S.	1 "	15c.....	Amos Hannah, Halifax River, N. S.	"	5.32	0.96	.....	"
" 6	"	27355	W. C. Anderson, Halifax, N. S.	1 "	40c.....	Unknown.....	Sold as Pure Quebec Syrup.	2.93	0.76	.....	"
" 6	"	27356	Larder Hulby & Co., Halifax, N. S.	1 qt.,	60c.....	Unknown. Furnished by A. W. Westover, Sutton Junction, Que.	Sold as Pure Quebec Syrup.	2.40	0.61	....	"
" 6	"	27357	Archibald & Son, Halifax, N. S.	1 pt.,	25c.....	Unknown. Furnished by A. W. Westover, Sutton Junction, Que.	Sold as Pure Quebec Syrup.	3.23	0.81	. . .	"

RECORD OF MAPLE SYRUP SAMPLES ANALYZED BY INLAND REVENUE DEPARTMENT LABORATORY.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Percentage on Dry Substance. Lead Subacetate Precipitate.	Percentage on Dry Substance. Total Ash.	Malic Acid Value.	Remarks.
1907.			*District of Nova Scotia—R. J. Waugh, Inspector*—Concluded.								
May 6	Maple Syrup.....	27358	W. J. Hopgood, Halifax, N. S.	1 pt.,	25c.....	Unknown. Supplied by D. F. Archibald, Athol, N.S.	Sold as pure.....	3.20	0.58	.....	Genuine.
" 7	"	27359	B. O. Bishop, Dartmouth, N. S.	1 bot.,	25c...	New England Maple Syrup Co., Stansbury, Vt, U. S.	Golden Tree Brand, sold as pure.	0.17	0.12	0.24	Adulterated.
" 7	"	27360	W. A. Adams, Halifax, N. S.	1 "	35c...	Unknown	Sold as Pure Quebec Syrup.	2.86	0.63	....	Genuine.
" 2	"	27333	E. McKenzie, Springhill, N. S.	1 pt.,	15c.....	J. Corkum, Springhill N. S.	Sold as pure.....	3.93	0.64	.....	"
" 2	"	27334	E. McKenzie, Springhill, N. S.	1 "	15c.....	Hibbert Hunter, Leamington.	Sold as pure.....	3.07	0.81	...	"
" 17	"	27361	H. M. Watson, Wolfville, N. S.	1 bot.,	50c.....	Wm. Poyzant, Gaspereaux Mountains, N. S.	.....	4.15	0.75	.....	"
" 17	"	27362	J. H. Barss, Wolfville, N. S.	1 pt.,	25c.....	D. R. Gilbert, Gilbert's Mountain, N. S.	.....	5.66	1.38	.....	"
" 17	"	27363	Porter Bros., Wolfville, N. S.	1 bot.,	40c.....	Godard Bros., Elgin, N. B.	Labeled Pure Maple Syrup.	4.67	0.98	.....	"
1907.			*District of Prince Edward Island—T. Moore, Inspector.*								
April 19	Maple Syrup.....	28399	A. Bowness, Kensington.	3 pts.,	60c.....	Standard Syrup Co., Burlington.	.....	2.98	0.53	.....	Genuine.
" 19	"	28400	R. Tuplin, Kensington....	3 cans,	42c.....	Archer Maple Cane Syrup, St. John, N. B.	Sold as Maple Cane Syrup. This sample is being sold by nearly all dealers in town and country as Maple Cane Syrup.	0.04	0.06	...	Sold as Maple Cane Syrup.

May	2	Maple Syrup....	31119	Mrs W. F. Carter, Charlottetown.	3 pts.,	60c...	Edward McKenzie, Springhill, N.E.		2.98	0.58	.....	Genuine.
"	4	"	31120	Wm Clark, North-Wiltshire, P.E.I.	3 "	60c...	Vendor		2.98	0.53	.. ..	"

1907. *District of New Brunswick—J. C. Ferguson, Inspector.*

April	10	Maple Syrup.	24350	W. H. Dunham, 115 Main St., St. John, N.B.	3 bottles,	90c.	Goddard Bros., General Merchants, Elgin, Albert N.B.	Bottled by Vendor from 5 gal. cans.	3.62	0 95	.....	Genuine.
"	10	"	24351	R. Jones, 576 Main St. St. John, N.B.	3 "	60c...	Wilfred Fenwick, City Market.	Bottled by Vendor from 5 gal. cans.	4.18	0.99	.....	"
"	11	Small's Maple Leaf Brand	24352	Walter Gilbert, Corners Charlotte and Princess, St. John, N.B.	3 cans, quarts,	$1.20	Canada Maple Exchange, Montreal.	Pure Maple Syrup, selected by furnishers.	2.05	0 63	.. .	"
"	11	Maple Syrup.	24353	Geo. S. Williams, City Market Stall 22, St. John, N. B.	3 jars,	50c....	Martin Carty, Elgin, Albert Co., N.B.	This package is warranted to containstrictly pure Maple Syrup.	4.76	1.00		"
"	11	"	24354	J. E. Quinn, City Market, Stall, E. F., St. John N.B.	3 "	70c....	Wm. Shamper, Kingston, N.B.	Pure Maple Syrup....	2.77	0.76	...	"
"	23	"	24377	Daniel A. Vail, Broad St., Sussex, N.B.	3 bout.,	25c...	Goddard Bros., Elgin, Albert Co., N.B.	Samples taken from 5 gallons can. Godard Bros.' card on can. No marks.	3.13	0.76	. ..	"
"	26	"	24381	Jas Mailer, Public Square, Newcastle, N.B.	3 "	60c...	Goddard Bros., Elgin, Albert Co., N.B.	Sample taken from 1 gal. can. No label or marks.	3.13	0.86	.....	"
"	30	"	24282	B. A. Mowatt, Main St., Campbellton, N.B.	3 "	25c...	H. Lavallée, St. Jean Port Joli Co. L'Islet, Que.	Sample taken from 1 gallon can. No label or marks.	1.95	0.46	0.23	Doubtful.
"	30	"	24383	W. H. Marquis & Co., Water St., Campbellton, N.B.	3 "	30c...	Goddard Bros., Elgin, Albert Co., N.B.	Sample taken from 5 gallons can. No label or marks.	4.67	0.80	....	Genuine.
"	25	"	24378	Steeves & Allanach, Main St., Moncton, N.B.	3 "	40c...	Henzon & Horseman, Lutz Mountain, Westmoreland, Co., N.B.	Sample taken from 5 gallons can. No label or marks.	3.07	0.61	.....	"
"	25	Lower Canada Maple Syrup...	24379	Geo. O. Stratton, 233 Main St., Moncton, N.B.	3 "	30c...	J. H. Harris & Co., Moncton, N.B.	Label on both sides of can. Lower Canada Maple Syrup.	2.89	0.87	... ..	"
"	25	Maple Syrup.....	24380	Geo. A. Robertson, Main St., Moncton, N.B.	3 "	32c...	Henzon & Horseman, Lutz-Mountain, Westmoreland. Co., N.B.	Sample taken from 5 gallons can. No label.	2.98	0 67	.....	"

RECORD OF MAPLE SYRUP SAMPLES, ANALYZED BY INLAND REVENUE DEPARTMENT LABORATORY.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vandor.	Inrpector's Rpport.	Percentage on Dry Substance. Lead Subacetate Precipitate.	Percentage on Dry Substance. Total Ash.	Malic Acid Value.	Remarks.
1907.			*District of New Brunswick—J. C. Ferguson, Inspector*—Concluded.								
May 9	Maple Syrup.....	29503	A. L. Bradley, Water St., St. Stephen, N. B.	3 bottles,	25c..	A. Claxton, Tower Hill, David's Parish, Charlotte Co., N.B.	No label on package...	0.99	0.11	0.19	Adulterated.
" 11	" ...	29504	Jno. McKnight, Regent St., Fredericton, N.B.	3 "	75c...	W. Movers, Bear-Island, N.B.	Label, "Pure Maple Honey."	4.52	0.95	.....	Genuine.
" 11	"	29505	W. R. Logan, Queen St., Fredericton, N. B.	3 "	75c...	Inch & Fripp, Fripp, N.-B.	Label "Pure Maple Honey."	4.40	0.78	.....	"
" 14	"	29506	Sullivan Bros., Main St., Woodsfock, N.B.	3 "	30c...	Garret, & Stafford, Sutton, Que.	Pure Maple Syrup....	3.90	0.87	.....	"
" 14	"	29507	W. S. Skillen, Main St., Woodstock, N.B.	3 "	40c...	Clifford Everett, Woodstock Parish, N.B.	No label	4.03	1.06	.....	"
" 16	"	29508	Geo. W. Warnock, Drummond Parish, N.B.	3 "	75c...	Vendor.	Label "Pure Maple Syrup."	3.13	0.64	.....	"
" 16	"	29509	Remi Plourd, Dead Brook Settlement, N.B.	3 "	40c...	Vendor.....	No label	4.59	0.61	.....	"
" 17	"	29510	C. Curless, Grand Falls, N. B.	3 "	40c...	Remi Plourd, St. Leonard's Parish, N.B.	"	5.07	0.84	.....	"
			District of Quebec—E. Beland, Inspector.								
April 4	Maple Syrup.....	26191	T. B. A. Pare, St. Joachim.	4¼ lb.,	55c...	T. B. A. Pare..... ...	.....	3.50	0.69	.....	Genuine.
" 4	"	26194	Gaudios Fortin, St. Joachim.	1 pint.,	25c...	Gaudios Fortin, St. Joachim.	.....	4.86	1.01	.....	"
" 8	"	26207	T. Julien, 124, Dorchester St. Quebec.	1 "	15c...	Tremblay, Chateau Richer.	.....	4.55	0.83	.....	"
" 8	"	26208	T. Julien, 124, Dorchester St., Quebec.	½ "	7c...	Cloutier, Chateau Richer..	.....	5.07	1.04	.....	"

"	16	"	26221	Edmond Clèche, St. Marie, Beauce.	1	"	15c.	Thos Dubois, St. Marie, Beauce.		6.15	0.89		
"	16	"	26222	Israël Fecteau, St. Marie, Beauce.	1	"	15c.	Israël Fecteau, St. Marie, Beauce.		4.95	0.86		"
"	16	"	26223	Thos. Champagne, St. Marie, Beauce.	1	"	15c.	Thos. Champagne, St. Marie, Beauce.		5.78	0.89		"
"	16	"	26224	Louis Marcoux, St. Marie, Beauce.	1	"	15c.	Louis Marcoux, St. Marie, Beauce.		5.44	0.86		"
"	16	"	26225	Joseph Dion, St. Elzéar, Beauce.	1	"	15c.	Joseph Dion, St. Elzéar, Beauce.		3.78	0.70		"
"	16	"	26226	Michel Marcoux, St. Elzéar, Beauce.	1	"	15c.	Michel Marcoux, St. Elzéar, Beauce.		5.55	0.81		"
"	16	"	26227	Gustave Turcotte, St. Marie, Beauce.	1	"	15c.	Gustave Turcotte, St. Marie, Beauce.		4.15	0.89		"
"	16	"	26228	Honoré Gosselin, St. Marie, Beauce.	1	"	15c.	Honoré Gosselin, St. Marie, Beauce.		4.92	0.90		"
"	18	"	26229	Michel Bilodeau, St. Marie, Beauce.	1	"	10c.	Michel Bilodeau, St. Marie, Beauce.		3.16	0.98		"
"	18	"	26237	Clovis Mercier, St. Marie, Beauce.	1	"	15c.	Clovis Mercier, St. Marie, Beauce.		3.69	0.86		"
"	18	"	26231	George Gagné, St. Marie, Beauce.	1	"	15c.	George Gagné, St. Marie, Beauce.		4.49	0.90		"
"	18	"	26232	Armias Dupuis, St. Marie, Beauce.	1	"	15c.	Armias Dupuis, St. Marie, Beauce.		6.20	0.86		"
"	22	"	26242	F. X. Pagnet, 54, Côte du Palais, Quebec.	½	"	8c.	Barthélemi Delisle, Pont Rouge.		4.12	0.89		"
"	22	"	26243	Joseph Savard, 35, St. Jean St., Quebec.	1	"	15c.	Pierre Bouchard, Ange Gardien.		3.87	0.90		"
"	22	"	26244	A. Grenier, 94, St. Jean St., Quebec.	1	"	16c.	F. Gagnon		3.56	0.81		"
"	22	"	26245	A. Grenier, 94, St. Jean St., Quebec.	1	"	18c.	Unknown		3.01	0.78		"

1907. *District of St. Hyacinthe—J.-C. Rouleau, Inspector.*

April	16	Maple Syrup	21	H. J. Elliot, South Durham.	1 can, 65c.		B. R. Elliot, Ulverton.	Pure Maple Syrup and guar. pure by maker.		2.70	0.56		Genuine.
"	16	"	22	H. J. Elliot, South Durham.	1 qt., 15c.		Jas Duffy, Danby	No label		3.75	0.76		"
"	17	"	23	E. C. Atkinson, Melbourne.	1 can, 75c.		Fred. Cummings, Ulverton.	"		3.07	0.61		"
"	17	"	24	J. Bourque, Windsor Mills.	1 jar, 50c.		J. Simms, St. François de Brompion.	"		5.69	1.13		"
"	18	"	25	Paul Tourigny, Victoriaville.	1 qt., 25c.		Pierre Hamel, Warwick	"		2.83	0.63		"
"	18	"	26	D. O. Bourbeau, Victoriaville.	1	"	18c.	M. Courtois, Arthabaskaville.	"		4 44	1.04		"

RECORD OF MAPLE SYRUP SAMPLES, ANALYZED BY INLAND REVENUE DEPARTMENT LABORATORY.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Percentage on Dry Substance. Lead Subacetate Precipitate.	Percentage on Dry Substance. Total Ash.	Malic Acid Value.	Remarks.
1907.			*District of St. Hyacinthe—J. C. Roulcau, Inspector*—Concluded.								
April 19	Maple Sugar	27	Joseph Demers, Thetford	1 qt.,	25c	J. Moore, Kennears Mills	No label	3.20	0.80		Genuine
" 20	"	28	H. J. Johnson, Minton	1 gal.,	$1.10	Vendor	"	3.01	0.68		"
" 20	"	29	Fortunat Denis, Martinville.	1 pint.,	11c	"	"	3.60	0.86		"
" 20	"	30	Mathias Fournier, Compton.	1 gal.,	25c.	"	"	2.89	0.55		"
" 20	"	31	E. N. Chaddock, Cookshire.	1 qt.,	25c	"	"	2.61	0.76		"
" 22	"	32	F. X. Lajoie, St. Liboire	1 pint,	10c	Clovis Quintal, St. Liboire.		3.09	0.70		"
" 24	"	33	Maple Tree Producers Association, Waterloo.	2 bottles,	gratis	Vendors		2.67	0.56		"
" 24	"	34	P. A. Portelauce, Farnham.	1 pint,	15c	M. Parisien, L'Ange Gardien, de Rouville.		3.01	0.80		"
" 25	"	35	Mrs. Ant. Sabourin, St. John, Que.	1 "	13c	Nap. Pratte, L'Ange Gardien de Rouville.		2.76	0 56		"
" 27	"	36	Octave Papillon, St. Ours.	1 "	10c	Vendors		4.58	0.80		"
" 27	"	37	Wm Lavallée, Ste. Victoire.	1 "	10c	"		2.98	0.61		"
" 27	"	38	Oct. Potvin, St. Ours	1 "	10c	"		3.16	0.87		"
" 27	"	39	Louis Sylvestre, Berthier-en-Haut.	1 "	10c	"		2.98	0.70		"
May 1	"	40	Buzzell Bros, Cowansville	1 can,	75c	J. Laraba & Sons, Cowansville.	Guaranteed Pure Syrup	3.07	0.67		"

April 5	Maple Syrup	31641	Jno. Caldwell & Co., 173, McGill St., Montreal.	1 tin, 90c.	Maple Produce Assoc., Ltd., Waterloo, Que.	Labelled, "Country Club Maple Syrup. Absolutely Pure".	2.58	0 72		Genuine.
" 5	"	31642	Jno. Caldwell & Co., 173, McGill St., Montreal.	1 " 80c.	J. Laraba & Son, Cowansville, Que.	Labelled, "Guaranteed Pure".	3.23	0.81		"
" 12	"	31643	Canada Maple Exchange, 618, Beaudry St., Montreal.	3 " 96c.	Canada Maple Exchange.	Labelled, "Selected Maple Syrup".	2.09	0.61		"
" 12	"	31644	Canada Maple Exchange.	3 " 48c.	Canada Maple Exchange.	Labelled, "Selected Maple Syrup".	2 36	0.61		"
" 16	"	31645	E. Brais, 743, St. Lawrence St., Montreal.	3 bottles, 50c.	A. Desautels, St. Hilaire.	Guaranteed Pure.	3.26	0.72		"
" 16	"	31646	R. L. Watkins. 789 St. Lawrence St.	3 " 50c.	Brown Co., Maple Product Co.	"	2.52	0.87		"
" 17	"	31647	Leduc et Frère, Valleyfield, Que.	1 qt., 30c.	J. Thibault, Franklin.	Sold as pure.	3.53	0.78		"
" 17	"	31648	Richer & Daoust, Valleyfield, Que.	1½ pint, 20c.	Not known.	" "	2.86	0.81		"
" 18	"	31649	G. Champoux Joliette, Que.	1½ " 15c.	O. Drouin, Kildare.		3.56	0.80		"
" 18	"	31650	Malo Bros, Joliette, Que.	1½ " 15c.	L. Chevrette, Kildare.		4.27	0.87		"
" 18	"	31651	C. Barette, Joliette, Que.	1½ " 20c.	J. Stafford, Kildare.		3.44	0.76		"
" 19	"	31652	Narcisse Hebert, St. Marc.	1 qt., 25c.	Vendor.		3.10	0.92		"
" 19	"	31653	B. Hervieu, L'Assomption.	1 " 25c.	"		4.21	0.89		"
" 19	"	31654	Emile Joinette, St. Joseph du Lac.	1 " 25c.	"		3.69	0.83		"
" 19	"	31655	Ergele Desrochers, St. Thomas, Joliette.	1 " 25c.	"		3.32	0.75		"
" 19	"	31656	B. Villeneuve, St. Eustache.	1 " 25c.	"		2.86	0.61		"
" 19	"	31657	Ernest Villeneuve, St. Eustache.	1 " 25c.	"		4.30	0.92		"
" 19	"	31658	Geo. Martel, L'Assomption	1 " 25c.	"		3.69	0.84		"
" 23	"	31659	Pringle, Stark & Co., Huntingdon, Que.	3 jars, 30c.	Wm. Arthur		3.04	0.65		"
" 23	"	31660	Jas Brown, Huntingdon.	1 tin, 75c.	J, Woods		3.07	0.72		"

RECORD OF MAPLE SYRUP SAMPLES, ANALYZED BY INLAND REVENUE DEPARTMENT LABORATORY.

Date of Collection.	Nature and Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Percentage on Dry Substance. Lead Subacetate Precipitate.	Percentage on Dry Substance. Total Ash.	Malic Acid Value.	Remarks.
1907.			*District of Ottawa—E. Belisle, general Inspector and A. E. Sanderson, Inspector.*								
April 6	Maple Syrup.....	32356	L'Institute Colonial Franco Canadian, Ironsides, Que.	1 qt.,	40c...	Vendor.....	Guaranteed Pure.....	3.38	0.73	....	Genuine.
" 6	"	32357	L'Institute Colonial Franco Canadian, Ironsides, Que.	1 "	40c...	"	"	3.69	0.83	.....	"
" 8	"	32358	A. F. Richard, Chelsea-Road, Que.	1 "	35c...	"	.....	3.10	1.01	.....	"
" 9	é	32360	G. W. Armstrong, Cornwall.	1 "	40c...	Not known. Sugars, Ltd, Montreal.	Bought for Pure	0.43	0.21	0.32	Vendor said that he bought for pure Maple Syrup and afterwards said it was made by Sugars, Ltd., Montreal and marked Compound.
" 9	"	32363	J. E. Chevrier, Cornwall.	1 "	35c...	Not known.....	Sold as pure.....	3.01	0.92	.....	Genuine.
" 9	"	32364	J. E. Chevrier, Cornwall.	1 "	35c...	"	"	2.30	0.78	.....	"
" 9	"	32365	D. J. McDonald, Cornwall.	1 "	35c...	A. E. Rymond, Sheet's-Island.	Pure Maple Sap Syrup	3.60	0.81	.....	"

	15	"	.....	32368	W. J. Eastcott, Bank St., Ottawa.	3 bot., 35c....	Unknown.....	Vendor sells as a Compound.	4.24	1.01	.. ..	Genuine. Sold to vendor for Pure Maple Syrup, but vendor sells for Compound and labels it as a Mixture.
"	15	"	.....	32369	W. J. Eastcott, Bank St., Ottawa.	3 " 40c...	E. Caldwell, Knowlton, Que.	Warranted Pure ..	2.86	0.65	....	Genuine.
"	15	"	.....	32371	Kavanagh Bros., Sparks St., Ottawa.	3 " 40c...	Hall, Barnstown, Que. ...	Guaranteed pure by Manufacturer.	3.20	0.63	.....	"
"	15	"	.....	32373	Bate & Co., Sparks St., Ottawa.	3 " 40c...	A. W. Weston, Sutton Junction, Que.	Sold as Pure "Maple Leaf Brand."	3.23	0 61	.....	"
"	15	"	.....	32375	Bryson Graham & Co., Sparks St., Ottawa.	1 can, 60c....	Castle & Co.....	.....	3.56	0.70	....	"
"	27	"	.....	32232	F. & H. Bamford, Hawkesbury, Ont.	3 bot., 75c.. .	Unknown.....	Sold as pure	4.30	0.87	.....	"
"	29	"	.....	32233	F. Soulière, Aylmer, Que..	4 " 60c...	J. G. Whyte, Rideau St, Ottawa.	"Regal Brand Choicest Quebec Product Mixture."	0.33	0.30	.....	Sold as Mixture.
May	7	"	....	32234	Louis Raymond, Hull, Que	1½ qt., 40c....	E. F. Laframboise, Sainte-Scholastique, Que.	Sold as pure.....	3.01	0.63	.....	Genuine.
"	7	"	.....	32235	Jos. Martel, Hull, Que....	1 qt., 25c.....	Henri Lebrun, Belle Rivière, Que.	"	2.98	0.67	...	"
"	7	"	.....	32236	F. Cousineau, Hull, Que ..	1 " 25c....	From Ste. Scholastique and St. Hermas, Que..	"	2.61	0.60	.....	"
"	7	"	....	32237	D. Savard, Hull, Que.....	1 " 25c....	Bought from farmers.....	Vendor thinks Syrup not pure.	0.34	0.11	0.14	Adulterated.
"	8	"	.....	32238	A. Villeneuve, Gatineau Point, Que.	1 " 30c....	F. X. Lorrain, Gatineau Point.	Sold as pure	1.60	0.40	0.12	"
"	8	"	.....	32239	A. J. Smith, Gatineau Point, Que.	1½ pint., 20c..	Jos. Grant, Ottawa.....	Sold as Maple Syrup..	0.71	0.13	0.14	"

1907. *District of Kingston—Jas Hogan, Inspector.*

May	2	Maple Syrup.. ...		31076	Albert Glover, Bagot St., Kingston.	3 qt., 90c.....	Small, Montreal	.....	2.24	0.58	.....	Genuine.
"	2	"	.....	31077	Albert Glover, Bagot St., Kingston.	3 " $1.35..	Maple Tree Producers Assoc., Waterloo, Que.	. ...	2.18	0.55	.....	"
"	2	"	.....	31081	F. Ostler, Johnston St., Kingston.	3 " 90c....	Small, Montreal.....	....	2.24	0.58	... ..	"
"	2	"	.....	31083	W. J. Nesbitt, Johnston St., Kingston.	3 qt., 70c.....	W. Koch, Montreal.....	Maple flavour.....	0.02	0.07	. ...	Sold as Maple Flavour Syrup.
"	2	"	.....	31088	C. Saunders, Princess St., Kingston.	3 pint., 65c. ..	....	....	2.46	0.76	.....	Genuine.

RECORD OF MAPLE SYRUP SAMPLES, ANALYZED BY INLAND REVENUE DEPARTMENT LABORATORY.

Date of Collection.	Nature of Samples.	No. of Samples.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Percentage on Dry Substance. Lead Subacetate Precipitate.	Percentage on Dry Substance. Total Ash.	Malic Acid Value.	Remarks.
1907.			*District of Kingston—Jas. Hogan, Inspector*—Concluded.								
May 2	Maple Syrup.....	31091	A. W. VanLuven. Princess St., Kingston.	3 chop.,	75c...	Leonard Van Luven & Son, Battersea, Ont.	.....	3.50	0.80	.....	Genuine.
" 3	"	31093	H. A. Fairfield, Front St., Belleville, Ont.	3 "	75c...	W. Koch, Montreal.....	Maple Flavor.....	0.06	0.12	.....	Sold as Maple Flavour.
" 3	"	31098	B. Harker, Front St., Belleville, Ont.	3 pintes,	90c ..	J. Sloan, Belleville.	Defiance Brand Pure Mixture.	0.55	0.18	.....	Sold as Mixture.
" 3	"	31100	G. Pearson, Front St., Belleville, Ont.	1½ chop.,	45c..	.....	Defiance Brand Pure Mixture.	0.70	0.12	.....	Sold as Mixture.
" 4	"	32405	T. A. Fisher, Williams St., Lindsay.	3 pintes,	75c ..	....	....	0.41	0.28	0.39	Adulterated.
" 4	"	32408	Adams Bros, Ken. St., Lindsay.	3 "	75c..	....	Maple Flavor Cabinet Brand.	0.24	0.10	....	Sold as Maple Flavour.
" 4	"	32414	White & Gillespie, George St., Peterboro, Ont.	3 "	60c..	.....	....	2.80	0.80	....	Genuine.
" 4	"	32419	A. W. Lockhart, George St., Peterboro.	3 "	75c..	Montreal Sugar, Ltd.....	Diamond Brand Mixture.	0.38	0.23	.....	Sold as Mixture.
" 4	"	32421	R. A. Dutton, George St., Peterboro, Ont.	1½ chop.,	45c..	.....	L'Habitant Brand Mixture.	0.21	0.15	....	Sold as Mixture.
" 4	"	32424	R. A. Dutton, Peterboro..	3 pintes,	90c ..	Small, Montreal....	Small's Standard Maple Syrup Mixture.	0.12	0.18	.. .	Sold as Mixture.
" 4	"	32425	W. J. Routh, Charlotte St., Peterboro.	3 chop.,	74c ..	....	Diamond Brand Mixture.	0.18	0.15	.....	Sold as Mixture.
" 5	"	32427	H. Burniam, Charlotte St., Peterboro.	3 pintes,	75c ..	Muskawa, Hamilton.....	Muskoka Brand Mixture.	0.92	0.26	.....	Sold as Mixture.
" 5	"	32429	J. Heal, Charlotte St., Peterboro.	3 chop.,	75c...	Imperial Syrup, Montreal.	Rock Candy Syrup, Coumpound.	0.04	0.06	.....	Sold as Compound.

April	5	Maple Syrup	32431	A. J. Warne, Charlotte St., Peterboro.	3 pints,	75c.	Red Cross, Montreal		0.23	0.15	0.39	Adulterated.
"	5	"	32437	W. H. Hamilton, Peterboro.	3 qt.,	75c.	Maple Tree Producers Assoc., Waterloo, Que.		2.46	0.61		Genuine.

14—6

1907. *District of London—Thos. Kidd, Inspector.*

April	16	Maple Syrup	30302	Sturday & Co., Goderich	1 qt.,	25c.	L. S. Perrin, London, Ont.		0.93	0.25	0.23	Adulterated.
"	17	"	30303	Casdeno Bros, Seaforth	1 "	35c.	Mrs R. McKenzey, Verna, Ont.		5.63	0.93		Genuine.
"	18	"	30305	Geo. McLennen, Clinton	1 pint,	20c.	Neil McGreggor, township Stanley.		5.41	1.12		"
"	18	"	30307	Thos Beacons, Clinton	1 "	25c.	Robt McIlvinn, near Watford.	Both samples broken in the transportation				
"	19	"	30308	W. J. Brown, Stratford	1 "	20c.	McCormack, London, Ont.		3.47	0.61		"
"	19	"	30311	M. Durkin, Mitchell	1 "	15c.	McCormack Mfg Co., London, Ont.		3.53	0.73		"
"	19	"	30312	Wm Stoneman, Mitchell	1 "	13c.	Lind Kerrigan & Co., London, Ont.		1.24	0.18	0.30	Adulterated.
"	24	"	30321	G. J. Watts, Thamesville	1 "	15c.	J. F. Smith, Windsor		0.32	0.15	0.19	"
"	24	"	30322	R. L. Randell, Thamesville.	1 "	15c.	Mrs. Truesdale, Kent Co.		3.33	0.85		Genuine.
"	25	"	30326	W. R. Everett, Windsor	1 qt.,	59c.	J. F. Smith, Windsor.		3.07	0.50		"
"	26	"	30329	Mahlam & Acres, St-Thomas.	1 pint,	15c.	Lind Kerrigan, London, Ont.		0.73	0.08	0.08	Adulterated.
May	1	"	30331	Jno. Kerr, Wingham	1 "	20c.	Jas. Henderson, Athens, Ont.		3.20	0.86		Genuine.
"	1	"	30335	H. G. Lennon, Harrison	1 "	15c.	John Stone, Toronto		0.32	0.21	0.12	Adulterated.
"	2	"	30338	Jno. Goss, Walkerton	1 "	20c.	McCormick Mfg Co., Toronto.		2.89	0.73		Genuine.
"	3	"	30342	Wm Buckley, Chesley	1 "	25c.	Hugh Walker & Sons, Guelph.		0.15	0.08	0.09	Adulterated.
"	3	"	30345	J. W. McDonald, Listowell.	1 "	25c.	Jno. Stewart, Molesworth.		4.20	0.92		Genuine.
"	10	"	30357	W. A. Armitage, Toronto.	1 qt.,	40c.	McArthur Ewing & Co., Toronto.		2.80	0.58		"
"	15	"	30370	Park Thompson, Toronto	3 glasses,	30c.	J. B. Hall, Coaticook, Que.		2.09	0.37	0.24	Doubtful.

RECORD OF MAPLE SYRUP SAMPLES, ANALYZED BY INLAND REVENUE DEPARTMENT LABORATORY.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Percentage on Dry Substance. Lead Subacetate Precipitate.	Percentage on Dry Substance. Total Ash.	Malic Acid Value.	Remarks.
1907.						*District of London—Thos Kidd, Inspector*—Concluded.					
April 13	Maple Syrup.....	30365	W. A. Pringle, Beeton....	1 pint,	20c...	Canada Preserving Co., Hamilton.	.....	1.04	0.37	0.08	Adulterated.
" 13	" ...	30364	W. J. Wood, Alliston.....	3 cups,	30c...	Eby Blain & Co., Toronto.	Pure Maple Syrup....	3.47	0.69	.....	Genuine.
" 14	" ...	30368	J. D. Elliott, Tottenham..	1½ pint,	35c..	E. B. Blain, Toronto.....	.....	3.56	0.76	.....	"
1907.						*District of Toronto—H. J. Dager, Inspector.*					
May 8	Maple Syrup.	33242	Spencer Smith, Toronto. .	3 pint,	75c...	A farmer at Smith's Falls .	.....	4 03	0.95	.....	Genuine.
" 8	"	33243	Joseph Patterson, Toronto.	1½ "	30c...	Eastern Townships Sugar Exchange, Que.	Labeled as pure. ...	2.52	0.58	.....	"
" 8	"	33244	C. W. Varcoe, Toronto...	3 "	45c ..	Sugars, Ltd, Montreal....	Labeled Mixture, sold as Maple Syrup.	0.44	0.21	.....	Sold as Mixture.
" 8	"	33245	J. J. Burton, Toronto.....	1½ "	22c...	Warren Bros, Agents, Toronto.	No label, sold as pure.	0.25	0.18	0.07	Adulterated.
" 9	"	33246	W. E. Medland, Toronto..	1½ "	22c...	Medland Bros, Agents, Toronto.	No label, sold as pure.	2.46	0.64	.....	Genuine.
" 9	"	33247	A. A. McKay, Toronto....	1 qt.,	30c...	J. Lumbers, agent, Toronto	No label	0.48	0.15	0.06	Adulterated.
" 10	" ...	33248	W. S. Fry & Co., Toronto.	1½ pint,	23c..	C. D. Bothwell, L'Avenir, Que.	Labeled as absolutely pure.	3.04	0.80	.....	Genuine.
" 10	" ...	33249	Gray & Co., Toronto.....	1 qt.,	30c...	Imperial Syrup Co., Montreal.	Sold as Maple Syrup. Labeled Compound after purchase was made. Purchaser said it was a mistake.	0.21	0.15	.....	Sold as Compound.

"	10	"	.....	33250	W. Massen, Toronto.....	3 pts., 45c.....	Beauce Maple Co., Que., McLaren Co., agents, Toronto.	Sold as Maple Syrup, Maple Flavour.	0.09	0.10	.....	Sold as Maple Flavour.
"	14	"	.....	33251	W. Rowantree, Toronto Junction.	1 qt., 30c.....	Canada Brokerage Co., Toronto.	Sold as Maple Syrup..	1.38	0.13	0.22	Adulterated.
"	14	"	.....	33252	J. A. Rice, Toronto.....	1 " 30c....	McArthur & Ewing, agents, Toronto.	Labeled Eastern Township Pure Maple Syrup.	2.89	0.56	.....	Genuine.
"	17	"	.....	33253	C. F. Brown, East Toronto	2 pts., 45c.....	Rutherford Marshall Co., Toronto.	Forest Brand, Maple Flavour.	0.06	0.12	.....	Sold as Maple Flavour.
"	17	"	.....	33254	J. C. Sharp, East Toronto.	3 " 45c....	Sugars, Ltd., Montreal....	Diamond Brand Mixture.	0.35	0.24	.....	Sold as Mixture.
"	20	"	.....	33255	W. H. Rykman, Hamilton.	1 qt., 25c.....	McLaren Cheese Co., Toronto.	Beauce Brand. After purchase the vendor aid it wasCompound	0.22	0.10	0.25	Sold as Compound.
"	20	"	.....	33256	Battrem & Co., Hamilton..	3 " 90c....	Eastern Township Maple Sugar Exchange, Sutton, Que.	Gnaranteed pure.....	2.69	0.61	.....	Genuine.
"	20	"	.....	33257	J. L. Brown, Hamilton....	1½ pint, 23c...	Sugars, Ltd, Montreal.....	No label.....	0.39	0.20	0.22	Adulterated.
"	20	"	.....	33258	Bain & Adams, Hamilton..	1½ " 30c...	P. Brady, St. Antoine, Que.	Taken from bulk.....	2.46	0.70	.....	Genuine.
"	20	"	.....	33259	P. H. Gage, Hamilton	1½ " 27c...	Eastern Townships Maple Syrup Co., Montreal.	.....	2.80	0.73	.....	"
"	21	"	.....	33260	Jas Osborne & Son, Hamilton.	1 qt., 35c.....	Simington, agents.....	Finest Maple Syrup...	6.36	0.80	.....	"
"	21	"	.....	33261	C. Boyle, Dundas.	1 " 30c....	Wm Koch, Montreal.....	Bottled by Vendor, sold as Maple Flavour.	0.23	0.13	0.26	Sold as Maple Flavour.

1907 — *District of Manitoba—R. W. Earl, Inspector.*

May	15	Maple Syrup.		25806	Campbell Bros & Wilson, Winnipeg.	1½ gal., 45c...	Campbell Bros & Wilson, Winnipeg.	Sold as Maple Flavour.	0.76	0.43	.....	Sold as Maple Flavour.
"	15	"	.....	25807	J. Patterson, Winnipeg...	½ " 80c...	Maple Tree Producers Association, Waterloo, Que.	.....	2.58	0.75	.....	Genuine.
"	15	"	.....	25808	J. A. McKerchar, Winnipeg.	½ " 75c...	R. McRae, Apple-Hill....	.....	3.13	0.81	.....	"
"	16	"	.....	25809	W. R. Francis, Winnipeg..	½ " 80c...	Small, Montreal.....	.....	2.30	0.52	.....	"
	16	"	.....	25810	Hudson Bay Co., Winnipeg.	½ " 85c...	Maple Tree Producers Association, Waterloo, Que,	.....	3.60	0.81	.....	"
	16	"	.....	25811	F. E. Meldon & Co., Winnipeg.	½ " 75c...	.....	.....	2.18	0.69	...	"
"	17	"	.....	25813	W. S. Jeffrey.....	1 qt., 40c.....	.....	.....	3.10	0.90	.....	"
"	17	"	.....	25814	Finch Co., Ltd, Winnipeg..	½ gal., 65c...	Eastern Townships, Sutton, Que.	.....	2.80	0.77	.....	"

RECORD OF MAPLE SYRUP SAMPLES, ANALYZED BY INLAND REVENUE DEPARTMENT LABORATORY.

Date of Collection.	Nature of Samples.	No. of Samples.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Percentage on Dry Substance. Lead Subacetate Precipitate.	Percentage on Dry Substance. Total Ash.	Malic Acid Value.	Remarks.
1907.			*District of Manitoba—R. W. Earl, Inspector*—Concluded.								
May 17	Maple Syrup	25815	W. J. Kennedy, Winnipeg.	½ gal.,	75c	Small, Montreal		2.15	0.69		Genuine.
" 27	"	25823	C. F. Woodside, Portage la Prairie.	1 qt.,	50c.	Wm Small, Montreal		2.15	0.70		"
" 27	"	25824	Hudson Bay Stores, Portage la Prairie.	1 "	50c	Maple Tree Producers Association, Waterloo, Que.		3.32	0.84		"
" 27	"	25825	C. S. B. Burley, Portage la Prairie.	1 "	45c	Wm Small, Montreal		2.18	0.66		"
" 22	"	25816	T. R. Hornoe, Brandon	1½ pt.,	30c	Not given		4.12	0.95		"
" 22	"	25817	Symington & Co., Brandon.	1½ "	30c	J. D. Knowlton, Ontario		3.26	0.76		"
" 22	"	25818	Symington & Co., Brandon.	1½ "	30c	Small, Montreal		1.97	0.70		"
" 23	"	25819	Mutter & Lynch, Brandon.	1½ "		F. McRae, Ontario		3.68	0.93		"
" 23	"	25820	W. Dowling & Co., Brandon.	½ gal		C. R. & A. J. Kunckey, Sutton, Que.		3.20	0.72		"
" 23	"	25821	W. Muir, Brandon	1½ pt		A. McDonald, Middleville, Ont.		3.13	0.81		"
" 23	"	25822	J. Bower & Co., Brandon.	½ "		T. Singleton, Toledo, Ont.		3.56	0.89		"
" 28	"	25843	C. J. McClocklin, Carberry.			T. Kennedy, Hallerton, Que.		0.66	0.30	0.27	Adulterated.

May	9	Maple Syrup	28741	Worne & Spice, Lacombe	3 tins,	$1.05.	Imperial Syrup Co., Montreal.	Maple Flavour	0.24	0.21		Sold as Maple Flavour.
"	9	"	28742	Campbell & Fitsworth, Lacombe.	3 "	$1.65.	Maple Tree Producers Assoc., Waterloo, Que.		2.95	0.78		Genuine.
"	11	"	28743	S. Lambert, Edmonton	3 "	$1.05.	Maple Tree Producers Assoc., Waterloo, Que.		2.61	0.80		"
"	11	"	28744	Capital Mercantile Co., Edmonton.	3 "	$1.35.	Maple Tree Producers Assoc., Waterloo, Que.		3.10	0.76		
"	11	"	28745	Hudson Bay Co., Edmonton.	3 "	$1.35.	Maple Tree Producers Assoc., Waterloo, Que.		2.89	0.76		"
"	13	"	28746	The Acme Co., Edmonton	3 "	$1 35.	Maple Tree Producers Assoc., Waterloo, Que.		2.89	0.92		"
"	13	"	28747	Duncan Bros & Batters, Edmonton.	3 "	$1.35.	Maple Tree Producers Assoc., Waterloo, Que.		2.44	0.70		"
"	13	"	28748	Gariepy & Sasalea, Edmonton.	1 pint,	60c.	Maple Tree Producers Assoc., Waterloo, Que.		3.01	0.52		"
"	13	"	28749	J. H. Morris & Co., Edmonton.	3 tins,	$1.50.	Maple Tree Producers Assoc., Waterloo, Que.		2.76	0.75		"
"	14	"	28750	D. H. Ghormley, Strathcona.	3 "	$1.50.	Maple Tree Producere Assoc., Waterloo, Que.		2.38	0 70		"
"	14	"	28751	Thos. Naylor, Strathcona	3 "	$1.50.	Maple Tree Producers Assoc., Waterloo, Que.		2.89	0.76		"
"	14	"	28752	T. P. Malone, Strathcona.	3 "	$1.50.	Maple Tree Producers Assoc., Waterloo, Que.		2.98	0.75		"
"	14	"	28753	Cook & Orr, Strathcona	3 "	$1.50	Maple Tree Producers Assoc., Waterloo, Que.		2.95	0.76		"
"	14	"	28754	A. H. Richards & Co., Strathcona.	3 "	$1.50.	Maple Tree Producers Assoc., Waterloo, Que.		2.95	0.70		"
"	14	"	28755	C. Sugarman, Strathcona	3 "	$1.50.	Maple Tree Producers Assoc., Waterloo, Que.		3.47	0.80		"
"	14	"	28756	Baxter & Co., Strathcona.	3 "	$1.20.	E. J. Berry, Brome, Que.		3.38	0.70		"
"	14	"	28757	Ross McDonald Co., Strathcona.	1 qt.,	65c.	Maple Tree Producers Assoc., Waterloo, Que.		2.44	0.73		"
"	22	"	28758	Calgary Milling Co., Calgary.	½ gal.,	90c.	E. G. Berry, Brome, Que.		2.80	0.67		"
"	22	"	22759	Wing & Kiduly, Calgary	⅓ "	90c.	E. G. Berry, Brome, Que.		3.32	0.69		"
"	22	"	22760	Hudson Bay Co., Calgary.	½ "	90c.	D. S. Perrin, London, Ont.		1.53	0.25	0.44	Adulterated.

RECORD OF MAPLE SYRUP SAMPLES, ANALYZED BY INLAND REVENUE DEPARTMENT LABORATORY.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Percentage on Dry Substance. Lead Subacetate Precipitate.	Percentage on Dry Substance. Total Ash.	Malic Acid Value.	Remarks.
District of British Columbia—E. B. Parkinson, Inspector.											
April 15	Maple Syrup.	32022	H. J. Hampton, Vancouver	1 qt.,	45c...	Eastern Townships Maple Sugar and Syrup Exchange, Sutton, Que.	Guaranteed pure by Vendor.	5.81	0.96	.....	Genuine.
" 16	"	32025	Marshall, Smith & Co., Ladner, C.B.	1 "	35c...	Ramsay Bros. & Co., Vancouver.	Empire Brand. Genuine Maple Flavour Syrup.	0.52	0.26	....	Sold as Maple Flavour.
" 18	"	32030	McDowell & Kinnis, Granville St, Vancouver.	3 jars,	30c....	Eastern Townships Maple Sugar and Syrup Exchange, Sutton, Que.	Warranted pure.	4.15	0.80	.....	Genuine.
" 18	"	32031	J. McTaggart, Granville St, Vancouver.	1 qt.,	30c...	G. A. Sanborn, Vancouver.	Canadian Rock Maple Flavour Syrup. Maple Syrup asked for.	0.36	0.17	....	Sold as Maple Flavour.
" 19	"	32032	Geo. Smith, Mount Pleasant, Vancouver.	1 "	50c...	Maple Tree Producers Assoc., Ltd, Waterloo, Buc.	Pride of Canada is a genuine Maple Sap Syrup.	2.76	0.70	....	Genuine.
" 19	"	32033	H.O. Lee, Mount Pleasant, Vancouver.	1 "	25c...	Balfour & Co., Hamilton, Ont.	Tartan Brand Maple Syrup, pure mixture.	1.47	0.30	.....	Sold as Mixture.
" 19	"	42034	W. Clark, Carrol St, Vancouver.	1 "	25c...	Sugars, Ltd, Montreal. ...	Columbia Brand, marked mixture. Bottled by Kelly Douglas, Vancouver.	0.49	0.27	....	Sold as Mixture.
" 22	"	32035	Healey & Vicars, Keefer St, Vancouver.	1 "	30c...	Ramsay Bros, Vancouver..	"Empire Brand" Maple Flavour Syrup, not sold as pure.	0.52	0.21	.....	Maple Flavour.
" 22	"	32037	Woodwards Dept. Store, Hasting St, Vancouver..	1 "	30c...	Ramsay Bros, Vancouver..	"Empire Brand." Maple Flavour Syrup.	1.72	0.21	....	Sold as Mixture.

"	23	"	32038	Dominion Grocery, Water St, Vancouver.	1	"	25c.	Sugars, Ltd., Montreal...	Columbia Brand, marked Mixture, bottled by Kelly, Douglass & Co., Vancouver.	0.46	0.23	.....	Sold as Mixture.
"	23	"	32039	B. B. Brown, David St, Vancouver.	1	"	50c.	Maple Tree Producers Assoc., Ltd, Waterloo, Que.	Pride of Canada, Genuine Maple Sap Syrup.	2.55	0.73	.....	Genuine.
"	24	"	32040	West End Grocery, New Westminster, C.-B.	1	"	50c.	Maple Tree Producers Assoc., Ltd, Waterloo, Que.	Pride of Canada, Genuine Maple Sap Syrup.	2.43	0.66	.....	"
"	24	"	32041	T. S. Annandale, New Westminster.	1	"	35c.	G. A. Sanborn, Vancouver.	Canadian Rock Maple Flavoured Syrup.	0.15	0.26	.....	Sold as Maple Flavour.
"	25	"	32042	E. H. McMillan, Granville St, Vancouver.	1	"	50c.	Maple Tree Producers Assoc., Ltd, Waterloo, Que.	Pride of Canada, Genuine Maple Sap Syrup.	2 50	0 60	.....	Genuine.
"	25	"	32043	Bruder & Gruchy, Granville St, Vancouver.	1	"	25c.	G. A. Sanborn, Vancouver.	Canadian Rock Maple Syrup made from pure Maple Sap.	1.04	0.21	.....	Sold as Maple Flavour.
"	26	"	32044	A. R. Steacy, North Vancouver.	1	"	30c.	Ramsay Bros, Vancouver.	Empire Brand Maple Flavour Syrup.	0.33	0.23	.....	Sold as Maple Flavour.
"	26	"	32045	M. A. Russell, North Vancouver.	1	"	50c.	Eastern Townships Maple Syrup and Sugar Exchange, Sutton, Que.	Guaranteed pure.....	3.63	0.76	.....	Genuine.
"	26	"	32046	J. Armstrong, Fairview, Vancouver.	1	"	25c.	Ramsay Bros Vancouver.	Empire Brand Maple Flavour Syrup.	0.55	0.18	.....	Sold as Maple Flavour.
"	26	"	32047	W. Webster, Fairview, Vancouver.	1	"	50c.	Maple Tree Producers Assoc., Ltd, Waterloo, Que.	Pride of Canada is a Genuine Maple Sap Syrup.	2.40	0.60	.....	Genuine.
	29	"	32063	E. C. Dixon, Powell St, Vancouver.	1	"	30c.	Sugars, Ltd, Montreal.....	Columbia Brand, marked Mixture. Bottled by Kelly, Douglass & Co., Vancouver.	0.41	0.23	.....	Sold as Mixture.

APPENDIX H.

BULLETIN No. 142—MILK.

Ottawa, Sept. 24, 1907.

W. J. Gerald, Esq.,
Deputy Minister of Inland Revenue.

Sir,—Milk, which enters so largely into the food of people in health, and forms the almost exclusive food of infants and invalids, is without doubt, the most important single article of diet. When we take into account the ease with which it can be adulterated by skimming and watering, to say nothing of the use of preservatives, dyes, thickeners, and other modes of falsification, it follows that the control of milk production and distribution should receive the attention of the Department of Inland Revenue, as charged with the administration of the Adulteration Act.

This conclusion was evidently arrived at by the late Chief Analyst, Mr. Thomas Macfarlane, and the first official publication issued under his direction had reference to the establishing of a Standard for normal milk. Since October, 1887, when Bulletin No. 1 was issued, there have been 17 bulletins (including the present one) dealing with this subject, published by the Inland Revenue Department. Up to the present time, it has been found impracticable to define, legally, a standard milk. In order to aid in the fixing of such a standard, as well as to show that earnest efforts have been made by the departmental laboratory to secure trustworthy and sufficient data for such a step, I think it well to synopticize, as briefly as possible, the work recorded in departmental publications, during the past twenty years.

The subject of milk is dealt with in the following Bulletins, issued by this Department:—

No.	1	issued	October, 1887.	No.	53	issued	December, 1897.
"	2	"	December, "	"	61	"	January, 1899.
"	9	"	June, 1889.	"	64	"	May, 1899.
"	11	"	October, "	"	74	"	February, 1901.
"	17	"	September, 1890.	"	80	"	December, 1901.
"	21	"	January, 1891.	"	93	"	February, 1904.
"	28	"	" 1892.	"	121	"	June, 1906.
"	32	"	March, 1893.	"	142	"	September, 1907.
"	43	"	January, 1896.				

Bulletin No. 1 contains a report upon 162 samples of whole milk, obtained in June, July and August, 1887, under expert supervision, from herds of not less than four cows. The following synopsis of results is of great interest and importance :—

—	Nova Scotia.	New Brunswick.	Quebec.	Montreal.	Ottawa.	Toronto.
Number of samples examined	32	11	20	33	29	37
Butter Fat—Highest	5·40	4·62	4·18	5·17	5·29	4·50
" Lowest	3·00	3·43	3·02	2·80	3·62	2·52
" Average	4·24	3 91	3·54	3·82	4·26	3·38
Non-fat solids "	8·48	8·54	8·85	8·47	8·67	8·70
Total solids "	12·72	12·45	12·39	12·29	12 93	12·08
Water	87·28	87·55	87·61	87·71	87·07	87·92

Based upon these results, the Chief Analyst suggested the adoption of the following constants for *Standard Quality Milk* :—

Total Solids	12.0 per cent.
Butter Fat	3·5 "
Solids other than fat	8·5 "

Bulletin No. 2 contains the results of analysis of 105 samples of market milk, as supplied to twelve towns and cities, in September 1887. Nine samples containing above 5·4 per cent fat, are classified as being "partly cream," the remaining samples show the following averages :—

City or Town.	Number of samples.	Water.	Fat.	Non-fat solids.	Total solids.
Halifax, N.S.	12	88·22	3·51	8·27	11·78
Pictou, N.S.	5	87·12	3 86	9·02	12·88
St. John, N.B.	9	88·01	3·96	8·03	11·99
Quebec	17	87·84	3·94	8·22	12·16
Montreal	14	87·08	3·83	9·09	12·92
Sherbrooke	5	86·84	4·31	8·85	13·16
Ottawa	6	87·17	4·20	8·63	12·83
Kingston	6	88·70	3·15	8·15	11·30
Belleville	6	87·20	4·17	8·63	12·80
Toronto	5	88·04	3·52	8·44	11·96
Port Hope	5	87·74	3·50	8·76	12·26
Peterborough	6	88·01	3·87	8·12	11·99
Market Milk	96	87·69	3·82	8·49	12·31

Although this collection (from which all samples containing more than 5·4 per cent of fat have been excluded) includes nine samples which are adjudged as "skimmed" and twelve samples which are adjudged as "watered," the average content of butter-fat and total solids fully meets the standard set for genuine milk in Bulletin No. 1.

Bulletin No. 9 contains the results of analysis of 196 samples of market milk, collected in March and April, 1888. Omitting 5 samples which contained more than 5·4 per cent fat, and 41 samples found to be skimmed or watered, the remaining 150 samples give the following averages :—

Water	87·42 per cent
Butter-fat	3·79 "
Non-fat solids	8·79 "
Total solids	12·58 "

It therefore appears that the limit of 12 per cent for total solids, and 3·5 per cent for butter-fat, as proposed in Bulletin No. 1, cannot be regarded as too high for genuine milk.

Bulletin No. 11. This important report upon 58 samples of milk, obtained in May and June, 1889, is intended to meet the point raised by the Dominion Dairymen's Association, that the standard of 12 per cent total solids, and 3·5 per cent fat proposed by Mr. Macfarlane, might be too high, so far as May and June milk was concerned; although satisfactory as regards the milk supply of other months.

Twenty four herds were examined, the average milk, morning and evening, being analyzed. Omitting one herd of pure Jerseys, whose milk averaged 5·54 per cent fat, and 15·08 per cent total solids, the mean results are:—

Water	87·38 per cent.
Butter-fat	3·66 "
Non-fat solids	8·96 "
Total solids	12·62 "

In this Bulletin there also appears the results of examining milk supplied to 16 cheese factories in the neighborhood of London, Ont. These milks include samples known to be skimmed or watered. The average results obtained are as follows:—

Water	87·42 per cent.
Butter fat	3·80 "
Non-fat solids	8·78 "
Total solids	12·58 "

When samples known to be skimmed or watered are omitted, these averages become:—

Water	87·26 per cent
Butter fat	3·93 "
Non-fat solids	8·81 "
Total solids	12·74 "

As a conclusion from these results, Mr. Macfarlane formally recommends the adoption of 3·5 per cent fat and 12 per cent total solids as a legal minimum for milk of standard quality.

Bulletin No. 17 gives the results of analysis of 165 samples of milk collected in the smaller towns of Ontario in July and August, 1890.

Judged on the basis of 3·5 per cent fat and 12 per cent total solids, the results are as follows:—

	Samples.	Per centage.
Adulterated or inferior	68	41
Genuine	97	59
Total	165	100

Bulletin No. 21 contains the result of analysis of 124 samples of milk from town supplies in Ontario and Manitoba in November, 1891. Judged on the basis of the proposed standard (3·5 per cent. fat and 12 per cent. solids) these were found to be as follows:—

—	Analyst.	Below Standard.		Genuine.		Total Samples
		Samples.	p. c.	Samples.	p. c.	
Towns in Ontario	Ellis	35	45	43	55	78
Towns in Manitoba	Kenrick	10	22	36	78	46
		45	36	79	64	124

Professor Ellis expresses the opinion that it is impossible to assert that a milk has been adulterated with water, if the *solids not fat* are higher than 8 per cent ; or that it has been skimmed if the fat exceeds 2·5 per cent.

Professor Kenrick questions the propriety of adopting any single standard for the whole of Canada.

Bulletin No. 28 gives the results of examination of 133 samples of milk collected in October, November and December of 1891 in the Kingston and London districts of Ontario and in Manitoba and the Northwest. The results may be summarized as follows :—

—	Analyst.	Below Standard.		Genuine.		Total.
		Samples.	p. c.	Samples.	p. c.	
Kingston district	Valade	8	30	19	70	27
London district	Harrison	11	20	43	80	54
Manitoba, &c	Kenrick	10	20	42	80	52
		29	22	104	78	133

The classification has reference to a standard of 3·5 per cent butter-fat and 12 per cent total solids.

Bulletin No. 32. This contains the results of analysis of 188 samples of milk collected throughout Nova Scotia, Quebec and Ontario in August, September and October, 1892. The results are summarized as follows :—

—	Below Standard.		Genuine.		Total.
	Samples.	p.c.	Samples.	p.c.	
Nova Scotia	21	50	21	50	42
Quebec	19	31	43	69	62
Ontario	29	35	55	65	84
	69	37	119	63	188

The classification is based upon a standard of 3·5 per cent fat and 12 per cent total solids.

Bulletin No. 43. This gives the result of analysis of 251 samples of milk collected throughout the Dominion during October, November and December of 1895. These are classified as follows :—

Genuine	181	72 per cent.
Watered	11	28 "
Partly skimmed	7	
Under average in total solids	15	
" cream	18	
" non-fat solids	19	
Total	251	100

The following important note, by Mr. Macfarlane, occurs in the text of this Bulletin :—

'For the information of the public, and in order to obtain greater precision hereafter, it may be well to explain the manner in which I have made use of the above expressions, as regards whole milk. The term *watered* is used, when the non-fatty

solids are under 8 per cent, and the butter percentage is below the average (3·5), or at least, not above it. When the "non-fat solids" show the normal percentage (8·5) and a lower amount of fat than 3 per cent, it is characterized as "partly skimmed". When a sample falls bolow 2 per cent butter fat, the word "skimmed" is used. The expression "under average" has been used for the purpose of indicating those samples whose adulteration cannot be pronounced upon with certainty, but which are, in point of quality, inferior to those marked genuine. "Under average in total solids" is the expression used when the latter fall below 12 per cent and the sample cannot be positively characterized as "watered". When the fat ranges between 3 and 3·5 per cent, the non-fat solids being normal, the sample is said to be "under average in cream"; and when the non-fat solids fall below 8·25 per cent the sample is said to be "under average" so far as regards the latter constituents.'

Bulletin No. 53. This Bulletin gives the results of analysis of 178 samples, collected throughout the Dominion in September and October 1897. The following is a synopsis:—

	Samples.	Per cent.
Genuine	115	65
Adulterated	19	11
Under average	44	24
	178	100

The classification is based upon the explanations given in Bulletin No. 43.

Bulletin No. 61 contains the results of examination of 74 samples of milk, obtained in towns of Ontario, in October, November and December of 1898. These were found as follows:—

	Samples.	Per cent.
Genuine	54	73
Adulterated	3	4
Under Average	17	23
	74	100

Bulletin No. 64 contains the results of analyzing 29 samples of milk, taken in Montreal, St. Hyacinthe and Sherbrooke, Que, in January and February, 1899.

	Samples.	Per cent.
Genuine	21	72
Adulterated	8	28
	29	100

This Bulletin also contains a study of the acidity of milk by A. L. Tourchot; and some work on the determination of Lactose and Casein.

Bulletin No. 74 contains the results of analysis of 131 samples, obtained throughout the Dominion, in November and December, 1900.

	Samples.	Per cent.
Genuine	104	79
Adulterated &c	27	21
	131	100

Preservatives (especially borates) were looked for. None were found.

Bulletin No. 80 contains the results of analysis of 182 samples of milk, taken throughout the Dominion, in September and October, 1901.

	Samples.	Per cent.
Genuine	116	64
Adulterated	7	4
Doubtful	59	32
	182	100

In this Bulletin, the Chief Analyst gives more precise meaning to the term "Under average in non-fat solids"; applying it only in cases where the solids not fat are under 8·25 per cent; but the butter-fat above 3·75 per cent, and the total solids, not under 12 per cent.

Bulletin No. 93 gives the results of analysis of 224 samples of milk, collected in November and December of 1903, throughout the Dominion.

	Samples.	Per cent.
Genuine	159	71
Adulterated	23	10
Under average	42	19
	224	100

Bulletin No. 121. This Bulletin deals with the inspection of skim-milk, buttermilk and cream, as well as with whole milk. Results of analysis of 332 samples of whole milk collected throughout the Dominion in April and May, 1906, are as follows :—

	Samples.	Per cent.
Partly cream	13	4
Genuine	189	57
Adulterated	45	14
Doubtful	85	25
	332	100

Comment.

Bulletins 1 and 11 contain the results of analysis of a very large number of authentic milks; representative of 165 herds of cows, containing from 4 to more than 50 cows each. The period represented, includes the months of May, June, July and August. The following resumé, gives the results at a glance :—

	Locality.	No. of Herds.	No. o Cows.	Average Fat.	Average Total Solids.	
Bull. No. 1	Nova Scotia	32	203	4·24	12·72	
	New Brunswick	11	.....	3·91	12·45	
	Quebec	20	167	3·54	12·39	
	Montreal and vicinity	33	466	3·82	12·29	Mean fat = 3·85
	Ottawa and vicinity	9	326	4·26	12·93	Mean solids = 12·46
	Toronto and vicinity	37	(225)+	3·38	12·08	
Bull. No. 11, London and vicinity		23	680	3·66	12·62	
		165	2,067+	3·80	12·62	

About 2,500 cows are represented in this synopsis and it is evident that, so far as averages are concerned, the minimum limits of 3·5 per cent fat and 12 per cent solids, are fully justified.

Closer inspection of the results shows that 10 herds (comprising about 118 cows) yielded milk containing less than 3 per cent of fat. (Mean fat = 2·78 per cent) and less than 12 per cent total solids (mean total solids = 11·36 per cent).

The lowest butter-fat given by any herd is 2·52 per cent. This is from a herd of 10 cows in the vicinity of Toronto; and it is noteworthy that the Toronto district shews the poorest quality of milk, an average for 37 herds, numbering about 400 cows, being 3·38 per cent fat, and 12·08 per cent total solids.

Thirty-five herds (numbering about 380 cows) show butter-fat between 3 and 3·5 per cent, the average for this lot being 3·2 per cent. The total solids average about 11·8 per cent.

It will be noted that the work recorded in Bulletins 1, 2, 9 and 11, is made a basis for determining the limits, below which milk should be regarded as "adulterated" within the meaning of the Act. As a result of this study, the late Chief Analyst concluded that 3·5 per cent of butter-fat and 12 per cent. total solids was a reasonable standard. Individual cows failed to meet this standard; and, indeed, 45 out of 142 herds, reported in Bulletin No. 1, yielded milk containing less than 3·5 per cent fat; ten (10) of these falling below 3·0 per cent. The fact that the remaining herds yielded milk so much above 3·5 per cent. as to bring the whole up to 3·86 per cent, was held to prove that the average of 3·5 per cent fat could easily be reached by any dairyman who properly selected and properly cared for his stock; and that the dairyman who purposely selected his cows with regard to quantity of milk, and without reference to quality, should not be permitted, unchallenged, to compete with those who, (constituting the large majority in every province of the Dominion) furnished milk which fully met the requirements of 3·5 per cent fat, and 12 per cent solids.

The work in subsequent bulletins consists of the analyses of market milks, interpreted in terms of the recommended standard.

The following table presents a synopsis of the results, and is important as showing how the adoption of a standard of 3·5 per cent fat and 12 per cent solids, affects the classification of market milk, as sold in Canada.

Number of Bulletin.	Number of Samples.	Genuine (per cent.)	Doubtful (per cent.)	Adulterated (per cent.)
17	165	59	19	22
21	124	64	26	10
28	133	78	7	15
32	188	63	22	15
43	251	72	21	7
53	178	65	24	11
61	74	73	23	4
64	29	72	11	17
74	131	79	18	3
80	182	64	32	4
93	224	71	19	10
121	332	57	29	14
	2,011	66	23	11

INSPECTION of 1907.

The work recorded in the tables now submitted, has been done upon 343 samples of whole milk, collected in July and August of this year. They represent all the inspectoral districts of Canada, with the exception of Manitoba.

I have applied to the interpretation of the analytical results the same standards for fat, total solids, and non-fat solids which my predecessor used in work of this kind. The following table shows, at a glance, the general conclusions.

Inspectoral district.	Total samples.	Genuine		Skimmed or partly skimmed.	Watered.	Doubtful.
		Normal.	Abnormal.			
Nova Scotia	30	21	4	1	4	0
P. E. Island	15	9	2	3	0	1
New Brunswick	30	22	5	1	2	0
Quebec	30	10	10	8	1	1
St. Hyacinthe	30	19	4	6	1	0
Montreal	30	9	20	1	0	0
Ottawa	30	19	11	0	0	0
Kingston	30	15	15	0	0	0
Toronto	30	3	10	7	8	2
London	28	15	13	0	0	0
Calgary	30	27	3	0	0	0
British Columbia	30	2	14	9	5	0
	343	171	111	36	21	4
		282				

The average percentage of genuine samples is 82, and is distinctly higher than at any previous inspection. The percentages of genuine samples for each district in regard to the total number of samples collected in that district, are as follows:—

District.	Samples examined.	Genuine.
Nova Scotia	30	83 per cent
P. E. Island	15	73 "
New Brunswick	30	90 "
Quebec	29	69 "
St. Hyacinthe	30	77 "
Montreal	30	97 "
Ottawa	30	100 "
Kingston	30	100 "
Toronto	30	43 "
London	28	100 "
Calgary	30	100 "
British Columbia	30	53 "

It thus appears that the districts of Toronto and British Columbia stand out prominently as those in which the milk supply is of very low quality.

In conclusion, I am of opinion that the standard proposed by the late Chief Analyst in 1887, is a reasonable one, and can easily be met by any dairyman who pays proper attention to his herd. Nor can it be urged that this standard is inapplicable to the summer months. Evidence to the contrary is furnished not alone by the collection specially made for this purpose in 1889 (Bulletin No. 11), but by many subsequent collections, including that now reported.

It is, however, undeniable that some individual cows, and even some herds, yield milk containing less than 3·5 per cent fat. We have on record, ten herds (118 cows) whose milk averaged only 2·78 per cent, and one herd of 10 cows gave only 2·52 per cent fat.

These herds were in Toronto district (1889) and it will be noted that it is in Toronto district that the poorest showing occurs, in the present inspection. Dr. Ellis, Public Analyst at Toronto, has recorded his opinion that it is impossible to assert that a milk has been adulterated with water, if the *solids not-fat* exceed 8 per cent, or that it has been skimmed, if the fat exceeds 2·5 per cent. This opinion is certainly justified, if certain herds in the Toronto district may be included among normal milk producers.

In the face of what has been recorded I am compelled to admit that while I believe the standards for milk recommended by the late Chief Analyst to be reasonable, and already attained throughout the greater part of Canada, it is impracticable that they could be enforced by legal enactment over the whole of Canada. Without going so far as to say that the cow must herself be consulted in the matter of quality of milk, it is undeniable that the existence of many herds, whose average milk shews less than 3 per cent of fat, and less than 11·5 per cent total solids, makes the universal adoption of a three and a half per cent standard impossible.

It remains, however, quite possible for towns and cities to fix local standards for their own milk supplies. And this, it seems to me, is the proper course to be pursued, at least for the present. In an appendix, I have given a list of cities and towns, in which by-laws regulating the quality of milk which may be sold therein, already exist. That the low quality of milk now produced in certain districts, could be raised to the proposed standard quality, by proper care on the part of dairymen, goes without saying. The natural incentive to needed improvement is, quite evidently, that the cities and towns purchasing such milk, should insist upon their supplies having a fixed minimum value in fat and total solids. The local authorities must of course, be charged with the responsibility of seeing that such enactments are enforced.

The work which this department can do, in aiding the improvement of this most important food substance, is apparently limited to an occasional inspection, throughout the whole country, with a view to ascertaining the general condition of milk supplies. To fix a lower standard than 3·5 per cent fat. and 12 per cent solids, would be to give endorsement to a quality of milk lower than the average quality now produced. I have already given my reasons for believing that it would be impracticable at present to enforce a standard of 3·5 per cent fat, and 12 per cent total solids, over the whole Dominion.

It is to be noted, in conclusion, that the work herein summarized has regard to the nutritive value of milk, i.e. its value as a food. But there is another aspect of the milk problem which ought not to be ignored. The cleanliness of market milk is second only in importance to its nutritive value. Apart from the disgusting character of the impurities which must be present in milk, unless the most scrupulous attention is paid to its production, the danger from disease germs present in it is very great indeed. It is not going too far to say that (omitting dessicated foods) just in proportion to the nutrient value of the material, is its suitability as a medium for the development of microbial life. It is at once apparent that milk may become a most efficient propagating medium for disease germs. The following quotation is from a recent publication of the Bureau of Animal Industry, Washington, D.C.

"EVIDENCE THAT MILK IS A CAUSE OF DISEASE."

1. It has been shown by the most painstaking investigations, extending over a long period of years, that certain diseases in the animal are communicable through the medium of the milk, this being especially true of tuberculosis, foot-and-mouth disease, anthrax and cowpox; and that diseases like garget, gastro-enteritis and septic fevers in the cow will render the milk morbific to men.

2. It has been shown that animals which have fed on poisonous forage plants or have been treated with strong medicaments are disqualified from producing a pure or sound milk

3. During the past twenty-five years there have been published in the different medical journals the histories of 195 epidemics of typhoid fever, 99 of scarlet fever and 36 of diptheria, all traceable to the milk supply.

In the recent exhaustive investigation conducted by the highest health authority in this country, viz., the United States Bureau of Public Health and Marine-Hospital Service, the commission definitely traced 85 of the 866 cases of typhoid fever (about 10 per cent) in the District of Columbia to the use of infected milk.

4. It has been shown in a former report that in the District of Columbia about one fourth, and in the country at large about one sixth, of all the children born perish before the completion of the first year; that nearly one-half of the deaths in children under 1 year of age are caused by gastro-enteric diseases, chiefly infantile diarrhœa; and that of the 54,047 infantile deaths which have been investigated at home and abroad with reference to feeding, 86·6 per cent had been artificially fed, all of which points with more than mere suspicion to the fact that the morbific agent is introduced into the body with the food (cow's milk).

This phase of the milk question must evidently be left to local action.

I have the honour to be, Sir,

Your obedient servant,

A. McGILL,

Chief Analyst.

RECORD OF FOOD SAMPLES—MILK—ANALYZED BY INLAND

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher.
1907.			*District of Nova Scotia—R. J. Waugh, Inspector.*			
Aug. 9	Milk	33436	J. McDonald, Halifax, N.S.	1 pint,	4c.	G. H. Madill, Milford, N.S.
" 9	"	33437	H. B. Blois "	1 "	4c.	W. Bryson, Hildon, N.S.
" 9	"	33438	W. Taylor "	1 "	4c.	E. Tupper, Hildon, N.S.
" 9	"	33439	J. M. Flemming "	1 "	4c.	A. Fisher, Alton, N.S.
" 9	"	33440	A. L. Theakston "	1 "	4c.	G. Withrow, Shubenacadie, N.S.
" 9	"	33441	G. H. Kent "	1 "	4c.	W. R. McPhee, McKay's Siding, N.S.
" 9	"	33442	Mrs. Hurley "	1 "	4c.	Mr Harvy, Halifax, N.S.
" 9	"	33443	Mrs. A. Cahill "	1 "	4c.	Mr. Clark, City Milk Co., Halifax, N.S.
" 9	"	33444	Mrs. Grant "	1 "	4c.	Scotia Pure Milk Co., City.
" 9	"	33445	Mrs. A. Salkus "	1 "	4c.	G. H. Kent, Halifax, N.S.
" 10	"	33446	Scotia Pure Milk Co., Halifax, N.S	1 "	4c.	Vendors
" 10	"	33447	G. D. Hogg "	1 "	4c.	W. Withrow, Elmsdale, N.S.
" 10	"	33448	P. A. Marryatt, North-west Ave., Halifax, N.S.	1 "	4c.	J. Keddy, Harrietfield, N.S.
" 12	"	33449	Mrs. O. Hondley, Dartmouth, N.S.	1 "	4c.	Mr. Ritchie, Cole Harbour Road, N.S.
" 12	"	33450	Mrs. Bellefontaine "	1 "	4c.	Mr. Ritchie, Cole Harbour Road, N.S.
" 12	"	33451	J. R. Grant "	1 "	4c.	Vendor
" 12	"	33452	W. E. Ford, Halifax, N.S.	1 "	4c.	Mr. Currie, Halifax, N.S.
" 12	"	33453	Jas. Hogan "	1 "	4c.	O. Upham, Halifax, N.S.
" 12	"	33454	P. Lowri "	1 "	4c.	A. Innis, Dartmouth, N.S.
" 14	"	33455	H. A. Boyd, Yarmouth, N.S.	1 "	4c.	Not known
" 14	"	33456	G. H. Murphy "	1 "	4c.	Vendor
" 15	"	33457	F. W. Wickwire, Kentville, N.S.	1 "	4c.	"
" 15	"	33458	Capt. Allen "	1 "	4c.	"
" 15	"	33459	H. Eagles, Kentville, N.S.	1 "	4c.	"
" 15	"	33460	J. W. Pyke, Kentville, N.S.	1 "	4c.	Not known
" 16	"	33461	R. W. Mearns, Windsor, N.S.	1 "	4c.	Vendor
" 16	"	33462	J. Muller, Windsor, N.S.	1 "	4c.	"
" 16	"	33463	C. Dill, Windsor, N.S.	1 "	4c.	"

SESSIONAL PAPER No. 14

REVENUE DEPARTMENT LABORATORY AND PUBLIC ANALYST.

Inspector's Report.	Results of Analysis.					Name of Analyst.	No. of Sample.	Remarks.
	Specific Gravity at 15° C.	Water.	Butter Fat.	Other Solids.	Total Solids.			
		p. c.	p. c.	p. c.	p. c.			
Taken from can in delivery.	1·0309	87·16	4·28	8·56	12·84		33436	Genuine.
" " ..	1·0314	87·47	3·91	8·62	12·53		33437	"
" " ..	1·0326	87·74	3·41	8·85	12·26		33438	"
" " ..	1·0278	86·75	5·31	7·94	13·25		33439	"
" " ..	1·0307	86·86	4·59	8·55	13·14		33440	"
" " ..	1·0311	87·53	3·95	8·54	12 47		33441	"
The vendor is a shopkeeper.	1·0295	86·25	5·37	8·38	13·75		33442	"
" " ..	1·0312	88·72	3·18	8·10	11·28		33443	Genuine, under average in total solids.
Sold as pasteurized milk.	1·0314	89·21	2·65	8·14	10·79		33444	Partly skimmed.
The vendor is a shopkeeper.	1·0284	89·33	2·95	7·72	10·67		33445	Watered.
Pasteurized by vendors.	1 0308	88·45	3·25	8·30	11·55		33446	Genuine, under average in total solids.
Sample taken from can in delivery wagon.	1·0303	86·41	5·06	8·53	13·59		33447	Genuine.
" " ..	1·0227	90·03	3·66	6·31	9·97		33448	Watered.
The vendor is a shopkeeper.	1·0269	89·32	3·45	7·23	10·68		33449	"
" " ..	1·0243	85·39	7·27	7·34	14·61		33450	Genuine.
Taken from delivery wagon.	1·0329	86·81	4·15	9·04	13·19		33451	"
The vendor is a shopkeeper.	1·0286	88·44	3·59	7·97	11·56		33452	Genuine, under average in solids not fat.
" " ..	1·0310	87·01	4·40	8·59	12·99		33453	Genuine.
" " ..	1·0322	88·31	3·21	8·48	11·69		33454	Genuine, under average in fat.
Sample taken from can in delivery wagon.	1·0346	85·81	4·87	9·32	14·19		33455	Genuine.
" " ..	1·0325	86·15	4·85	9·00	13·85		33456	"
" " ..	1·0307	87·42	4·11	8·47	12·58		33457	"
" " ..	1·0326	87·41	3·70	8·89	12·59		33458	"
Taken from delivery wagon.	1·0278	89·86	3·31	6·83	10·14		33459	Watered.
The vendor is a shopkeeper.	1·0327	86·63	4·71	8·66	13·37		33460	Genuine.
Taken from delivery wagon.	1·0325	87·09	4·00	8·91	12·91		33461	"
Taken from delivery wagon.	1·0270	86·63	5·46	7·91	13·37		33462	"
Taken from delivery wagon.	1,0316	86·46	4·82	8·72	13·54		33463	"

RECORD OF FOOD SAMPLES—MILK—ANALYZED BY

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher.
1907.			*District of Nova Scotia—R. J. Waugh, Inspector*—Concluded.			
Aug. 16	Milk.....	33464	T. M. Currie, Windsor, N.S.....	1 pint,	4c..	Vendor .....
" 16	"	33465	W. Livingstone, Windsor, NS.....	1 "	4c..	T. M. Currie, Windsor
			District of Prince Edward Island—T. Moore, Inspector.			
July 25	Milk.....	31124	A. Mutch, Hopeton.....	1 pint,	3c..	Vendor .....
" 27	"	31125	T. R. Enman, Charlottetown Royalty	1 "	3c..	" .....
" 27	"	31126	Hamond Kelley, Southport.....	1 "	3c..	" .....
" 30	"	31127	Frank Conroy, Souris.....	1 "	3c..	P. McIsaac, Souris Royalty.
Aug. 4	"	31128	Rogers Farquharson, Lot 48, Southport.	1 "	3c..	Vendor .....
" 4	"	31129	A. R. McKay, St. Peters Road ...	1 "	3c..	" .....
" 4	"	31130	Miller Matheson, Charlottetown Royalty.	1 "	3c..	" .....
" 7	"	31131	G. M. Price, Summerside.....	1 "	3c..	" .....
" 7	"	31132	L. J. Pickering, Summerside	1 "	3c..	" .....
" 7	"	31133	Joseph McNeill, Summerside.....	1 "	3c..	" .....
" 7	"	31134	J. W. Callbeck, Summerside.....	1 "	3c..	" .....
" 7	"	31135	Thomas Glover, Summerside.....	1 "	3c..	" .....
" 8	"	31136	W. Wheatley, East Royalty.....	1 "	3c..	" .....
" 8	"	31137	Victor McMillan, Charlottetown Royalty.	1 "	3c..	" .....
" 8	"	31138	Cameron & White, Charlottetown....	1 "	3c..	P. Mutch, Lot 48.....
			District of New Brunswick—J. E. Ferguson, Inspector.			
" 1	"	29534	Timothy Desmond, Loch Lomond Road, St. John Co., N.B.	$\frac{1}{3}$ "	5c..	Vendor .....
" 1	"	29535	Jas Beyea, Black River Road, St. John Co., N.B.	$\frac{1}{3}$ "	5c..	" .....
" 1	"	29536	S. A. Carpenter, Manawagonish Road, St. John Co., N.B.	$1\frac{1}{2}$ "	9c..	" .....
" 1	"	29537	Alderbrook Dairy Co., 12 Sydney St., St. John, N.B.	$\frac{1}{3}$ "	5c..	W. V. Darling, Jubilee Sta., King's Co. N.B
" 1	"	29538	Jas. W. Brogan, 10 Brussell St., St. John, N.B.	$\frac{1}{3}$ "	6c..	M. Gibson, Red Head, St. John Co., N.B.
" 2	"	29539	T. M. Davidson's Dairy, Little River Road, St. John Co., N.B.	1 "	5c..	Vendor.....
" 2	"	29540	Jas. Macaulay, Cor. Queen and Wentworth Sts., St. John, N.B.	1 "	7c..	A. E. Macauley. St. John N.B.

INLAND REVENUE DEPARTMENT LABORATORY—*Continued.*

Inspector's Report.	Results of Analysis.					Name of Analyst.	No. of Sample.	Remarks.
	Specific Gravity at 15° C.	Water.	Butter Fat.	Other Solids.	Total Solids.			
		p.c.	p.c.	p.c.	p.c.			
Taken from delivery wagon.	1·0317	86·62	4·79	8·59	13·38		33464	Genuine.
The vendor is a shopkeeper.	1·0339	87·50	3·60	8·90	12·50		33465	"
	1·0344	88·32	2·61	9·07	11·68		31124	Partly skimmed.
	1·0321	87·88	3·41	8·71	12·12		31125	Genuine.
	1·0324	86·29	4·71	9·00	13·71		31126	"
	1·0343	88·54	2·54	8·92	11·46		31127	Partly skimmed.
	1·0311	86·89	4·48	8·63	13·11		31128	Genuine.
	1·0324	86·24	4·65	9·11	13·76		31129	"
	1·0312	87·91	3·58	8·51	12·09		31130	"
	1·0318	82·96	9·27	7·77	17·04		31131	"
	1·0324	88·37	3·11	8·52	11·63		31132	Genuine. Under average in fat.
	1·0334	86·99	3·89	9·12	13·01		31133	Genuine.
	1·0335	87·85	3·26	8·89	12·15		31134	Genuine. Under average in fat.
	1·0303	87·29	4·30	8·41	12·71		31135	Genuine.
	1·0330	87·27	3·73	9·00	12·73		31136	"
	1·0329	88·70	2·81	8·49	11·30		31137	Partly skimmed.
	1·0333	88·56	2·92	8·52	11·44		31138	Doubtful as to skimming.
Sample taken from milk wagon on street while serving customers.	1·0318	87 91	3·44	8·65	12·09		29534	Genuine.
" "	1·0298	86·84	4·79	8·37	13·16		29535	"
	1·0276	88·20	4.12	7·68	11·80		29536	Genuine; under average in solids not fat.
	1·0298	86·61	5·00	8·39	13·39		29537	Genuine.
	1·0340	87·73	3·91	8·36	12·27		29538	"
Sample taken from milk wagon on street while serving customers.	1·0308	86·97	4·47	8·56	13·03		29539	"
	1·0295	87·85	4·00	8·15	12·15		29540	Genuine; under average in solids not fat.

RECORD OF FOOD SAMPLES—MILK—ANALYZED BY

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher.
1907.			*District of New Brunswick—J. C. Ferguson, Inspector*—Con.			
Aug. 2	Milk.....	29541	H. M. Floyd, 124 Queen St., St. John, N.B.	1 Pint	7c..	Hanford McKnight, Apohaqui, King's Co., N.B.
" 2	"	29542	W. R. Small, cor. Gorman and Queen St., St. John, N.B.	1 "	7c..	Sussex Milk Co., 38 Sydney St., St. John, N.B.
" 3	"	29543	C. D. Harrington, Milledgeville, St. John Co., N.B.	1 "		Vendor .....
" 3	"	29544	M. H. Green, Milledgeville, St. John, N.B.	1 "	5c..	" .....
" 3	"	29545	Chas. N. Huggard, 165 Main St., St. John, N.B.	1 "	7c..	Alfred Freeze, Penobsquis, King's Co., N.B
" 6	"	29546	Sussex Milk Co., Sussex, King's Co., N.B.	1 "	5c..	McIntyre Bros., Sussex Parish, King's Co., N.B.
" 6	"	29547	Sussex Milk Co., Sussex, King's Co., N.B.	1 "	5c..	H. T. Hays, Sussex Parish, King's Co., N.B.
" 8	"	29548	Moncton Pasteurized Milk Co., Moncton, N.B.	1 "	5c..	Moncton Pasteurized Milk Co., Lewisville, Westmoreland, Co., N.B.
" 8	"	29549	Geo. O. Stratton, 293 Main St., Moncton, N.B.	1 "	5c..	" "
" 9	"	29550	Keating Bros., Chatham, N.B.	1 "	5c..	Vendor .....
" 9	"	29551	Geo. E. Fisher, Chatham, N.B.	1 "	5c..	" .....
" 12	"	29552	William Rogers, Bathurst Village, N.B.	1 "	5c..	" .....
" 12	"	29553	Mrs. Thos. Kennah, St. George St., Bathurst, N.B.	1 "	5c..	" .....
" 20	"	29554	Clifford Thompson, Old Ridge, St. Stephen, N.B.	1 "	6c..	" .....
" 20	"	29555	Richard Thomas, Box 272, St. Stephen, N.B.	1 "	6c..	" .....
" 20	"	29556	G. K. Thomas, St. Stephen, N.B....	1 "	6c..	" .....
" 22	"	29557	Walter McFarlane, King St., Fredericton, N.B.	1 "	5c..	Vendor, Nashwaaksis, York Co., N.B.
" 22	"	29558	C. J. Bodkin, King St., Fredericton, N.B.	1 "	5c..	Robert M. Gay, Kingsclear, York Co., N.B.
" 22	"	29559	A. D. Gunter, King St., Fredericton, N.B.	1 "	5c..	G. W. Bowder, Nashwaaksis, York Co., N.B.
" 22	"	29560	Fred. P. Robinson, Regent St., Fredericton, N.B.	1 "	5c..	Vendor, Nashwaaksis, York Co., N.B.
" 24	"	29561	Cyrus Vanwart, Woodstock, N.B....	1 "	5c..	Vendor.....
" 26	"	29562	Jno. R. Graham, Grand Falls, Victoria Co., N.B.	1 "	6c..	" .....
" 26	"	29563	Ward B. Burpee, Grand Falls, Victoria Co., N.B.	1 "	6c..	" .....

SESSIONAL PAPER No. 14

INLAND REVENUE DEPARTMENT LABORATORY—*Continued.*

Inspector's Report.	Results of Analysis.					Name of Analyst.	No. of Sample.	Remarks.
	Specific Gravity at 15° C.	Water.	Butter Fat.	Other Solids.	Total Solids.			
		p.c.	p.c.	p.c.	p.c.			
....	1·0314	88·00	3.45	8·55	12·00	.....	29541	Genuine.
.....	1·0319	87·40	3·86	8·74	12·60	.....	29542	Genuine.
Sample taken from milk wagon on street	1·0279	88·76	3·60	7·64	11·24	.....	29543	Watered.
" "	1·0282	88·19	3·79	8·02	11·81	....	29544	Genuine ; under average in solids not fat.
.....	1·0306	88·37	3·31	8·32	11·63	.....	29545	" "
....	1.0279	88·31	3·07	7·62	10·69	... .	29546	Watered.
.....	1·0305	87·76	3·86	8·38	12·24	... .	29547	Genuine.
Milk is pasteurized. Taken from milk wagon on street while serving customers.	1·0329	88·18	3·41	8·41	11·82	.....	29548	"
Taken from large can in vendor's store.	1·0337	88·46	2·98	8·56	11·54	... .	29549	Probably genuine, under average in fat.
Taken from milk wagon on street while serving customers.	1 0293	86·65	5·06	8·29	13·35	.....	29550	Genuine.
" "	1·0298	88·23	3·57	8·20	11·77	....	29551	Genuine ; under average in solids not fat.
" "	1·0320	87·64	3·63	8·73	12·36	.....	29552	Genuine.
.....	1·0316	85·54	5·53	8·93	14·46	.....	29553	"
Taken from milk wagon on street while serving customers.	1·0320	87·73	3·73	8·54	12·27	....	29554	"
" "	1·0298	86·05	5·42	8·53	13·95	.....	29555	"
" "	1·0294	86·69	5·09	8·22	13·31	.....	29556	"
Sample taken from large can in wagon while delivering milk.	1·0312	85·69	5·67	8·64	14·31	. ...	29557	Genuine.
Sample taken from large can in wagon while delivering milk to dairy depot.	1 0327	87·57	3·94	8·49	12·43	....	29558	"
Sample from large can in delivery wagon.	1·0321	87·71	3·78	8·51	12·29	.....	29559	"
" " ..	1·0300	83·70	7·56	8·74	16·30	.....	29560	"
" " ..	1·0319	86·06	4·88	9·06	13·94	... .	29561	"
" " ..	1·0327	88·18	2·83	8·99	11·82	.....	29562	Partly skimmed.
" " .	1·0320	86·87	4·00	9·13	13·13	.....	29563	Gennine.

RECORD OF FOOD SAMPLES—MILK—ANALYZED BY

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher.
1907			*District of Quebec— E. Béland, Inspector.*			
July 2	Milk	26274	Moise Michaud, 371 Colomb.	1 pint,	5c.	Vendor.
" 25	"	26275	Onezime Turgeon, 193 Latourel	1 "	5c.	"
" 25	"	26276	Charles Julien	1 "	4c.	"
" 25	"	26277	Cyrile Auger, 129 Caron	1 "	4c.	"
" 25	"	26278	Albert Dubois, 1141½ St. Valier	1 "	4c.	"
" 25	"	26279	Ozariste Bégin, 8 Kirouack	1 "	5c.	"
" 25	"	26280	Napoleon Ruel, 52 Victoria	1 "	4c.	"
" 25	"	26281	Charles Dorion, Charlesbourg Trecaré	1 "	4c.	"
" 25	"	26282	Louis Labranche. Limoilou	1 "	4c.	"
" 25	"	26283	François Pouliot, 59 St. Luc	1 "	5...	"
" 25	"	26284	Narcisse Turgeon, 27 Rigotville	1 "	5c.	"
" 25	"	26285	Charles Mauger, St. Ambroise	1 "	5c.	"
" 25	"	26286	Alphonse Légaré, 167 St. Luc	1 "	5c.	"
" 25	"	26287	Louis Boucher, 309 Colomb	1 "	5c.	"
" 25	"	26288	Narcisse Allard, Ancienne Lorette	1 "	5c.	"
" 25	"	26289	Achilles Turgeon, 229 D'Aiguillon	1 "	5c.	"
" 25	"	26290	Jean Bouchard, Stadacona	1 "	5c.	"
" 25	"	26291	Alphonse Paradis, Charlesbourg	1 "	5c.	"
" 25	"	26292	Alexandre Vilneuve, Charlesbourg	1 "	5c.	"
" 25	"	26293	Arthur Parent, Charlesbourg Ouest	1 "	5c.	"
" 25	"	26294	François Reneaud, St. Ambroise	1 "	5c.	"
" 25	"	26295	Joseph Reneaud "	1 "	5c.	"
" 25	"	26296	J. Bt. Vezina "	1 "	5c.	"
" 25	"	26297	Arcarde Caouette, 970 St. Valier	1 "	5c.	"
" 25	"	26298	Wilbrod Plamondon, 205 rue Massue	1 "	5c.	"
" 25	"	26299	Pierre Lepire, Charlesbourg	1 "	5c.	"
" 25	"	26300	J. Bt. Thibeault, St. Ambroise	1 "	5c.	"
" 25	"	26301	Raymond Bussière, St. Malo	1 "	5c.	"
" 25	"	26302	J. Bt. Carrier, Petite Rivière	1 "	5c.	"
" 25	"	26303	Ignace, Verret "	1 "	5c.	"

SESSIONAL PAPER No. 14

INLAND REVENUE DEPARTMENT LABORATORY—*Continued.*

Inspector's Report.	Results of Analysis-					Name of Analyst.	No. of Sample.	Remarks.
	Specific Gravity at 15° C.	Water.	Butter Fat.	Other Solids.	Total Solids.			
	p. c.	p. c.	p. c.	p. c.	p. c.			
Sample from large can in delivery wagon.	1·0317	88·21	3·00	8·79	11·79		26274	Genuine, below average in fat.
	1·0328	87·83	3·40	8·78	12.18		26275	Genuine, under average in fat.
Broken duplicate....	1·0317	87·04	4·03	8·93	12·96		26276	Genuine.
	1·0306	87·78	3·33	8·89	12·22		26277	Genuine, under average in fat.
	1·0306	88·26	3·07	8·68	11·74		26278	" "
	1·0317	87·77	3·75	8·49	12·24		26279	Genuine.
	1·0317	87·93	4·23	7·84	12·07		26280	Genuine, under average in non-fat solids.
	1·0306	87·53	4·67	7·80	12·47		26281	" "
	1 0306	88·15	3 08	8·77	11·85		26282	Genuine, under average in fat.
	1·0295	86·97	4·06	8·97	13·03		26283	Genuine.
	1·0328	86·80	4·00	9·11	13·20		26284	"
	1·0306	86·87	4.14	8·99	13·13		26285	"
Broken duplicate....	1·0349	88·37	2·70	8·93	11·63		26286	Partly skimmed.
" " ..	1·0340	89·10	2·28	8·61	10·89		26287	" "
" " ..	1·0320	88·63	2·61	8·76	11·37		26288	" "
	1·0320	88·85	2·86	8·28	11·14		26289	Probably partly skimmed.
One bottle broken...	1·032	88·11	3·54	8·35	11·89		26290	Genuine; slightly below average in total solids
	1·0317	87·13	4·20	8·67	12·87		26291	Genuine.
	1·0320	89·04	2·69	8·26	10·95		26292	Probably partly skimmed.
	1·033	88·33	3·02	8·64	11·66		26293	If genuine; under average in fat.
	1·030	89·77	3·19	7·04	10·23		26294	Watered.
	1·0319	87·15	3·98	8·87	12·85		26295	Genuine.
	1·0330	88·07	3·54	8·39	11·93		26296	"
One bottle broken...	1·036	88·74	2·54	8·72	11·26		26297	Probably partly skimmed.
	1·033	87·96	3·19	8·85	12·04		26298	Genuine; under average in fat.
	1·033	88·54	2·95	8·49	11·44		26299	Probably partly skimmed.
	1·033	87·71	3·87	8·41	12·29		26300	Genuine.
One bottle broken...	1·034	88·51	2·85	8·64	11·49		26301	Probably partly skimmed.
Both samples broken.							26302	
	1·0319	87·55	3·52	8·93	12·45		26303	Genuine.

8-9 EDWARD VII., A. 1909

RECORD OF FOOD SAMPLES—MILK—ANALYZED BY

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher.
1907.			*District of St. Hyacinthe— J. C. Roulcau, Inspector.*			
Aug. 1	Milk..	61	W. Garceau, Drummondville	1 pint,	3c..	Vendor
" 1	"	62	" "	1 "	3c..	J. B. Landry, Drummondville.
" 2	"	63	Elie Lemire, Nicolet	1 "	....	Vendor
" 2	"	64	Nap. Desilet "	1 "	....	
" 2	"	65	Moïse Guilbert "	1 "	...	
" 6	"	66	Jos. Lay, Richmond	1 "	....	Vendor
" 8	"	67	Eug. Garneau, Thetford	1 "	3c..	"
" 8	"	68	Fred Dodier, Thetford	1 "	3c..	Vendor
" 10	"	69	Miss Morais, Lennoxville	1 "	....	"
" 10	"	70	Louis Bergeron, Sherbrooke	1 "	....	"
" 10	"	71	J. A. Benoit, Sherbrooke	1 "	....	Several milkmen
" 10	"	72	M. Robertson, Sherbrooke	1 "	....	" "
" 10	"	73	W. J. Hunt, Sherbrooke	1 "	....	Vendor
" 14	"	74	H. Lemaire, St. Jean, Que	1 "	....	V. Richard, St. Jean..
" 15	"	75	E. Martel, Farnham	1 "	....	Vendor
" 15	"	76	S. Robert, Farnham	1 "	....	"
" 16	"	77	D. Riendeau, Granby..	1 "	3c..	"
" 16	"	78	S. R. Webster, Granby	1 "	3c..	Lewis Doe, Granby...
" 16	"	79	Thos. Hart, Granby.	1 "	3c .	Vendor
" 20	"	80	V. Bardier, St. Anne de Sorel	1 "	3c..	"
" 20	"	81	N. Crepeau, Sorel	1 "	3c..	"
" 20	"	82	J. B. Guevremont, Sorel	1 "	3c..	"
" 20	"	83	P. Mandeville, Sorel	1 "	3c..	"
" 20	"	84	N. Salvail, St. Anne de Sorel	1 "	3c..	"
" 20	"	85	P. Sabourin, St. Hyacinthe	1 "	3c..	"
" 20	"	86	P. Sabourin, St. Hyacinthe..	1 "	3c..	"
" 20	"	87	P. Duhamel, St. Hyacinthe	1 "	3c..	Alex. Dauphinais, St. Hyacinthe.
" 21	"	88	W. Chapdelaine, St Hyacinthe	1 "	3c..	Vendor
" 23	"	89	Geo. Hulburd, Sweetsburg	1 "	free	"
" 29	"	90	F. X. Laplante, St. Hyacinthe	1 "	3c..	J. B. Laplante, St. Hyacinthe.

SESSIONAL PAPER No. 14

INLAND REVENUE DEPARTMENT LABORATORY—*Continued.*

Inspector's Report.	Results of Analysis.					Name of Analyst.	No. of Sample.	Remarks.
	Specific Gravity at 15° C.	Water.	Butter Fat.	Other Solids.	Total Solids.			
		p. c.	p. c.	p. c.	p. c.			
....	1·032	88·51	2·57	8·92	11·49	....	61	Partly skimmed.
.....	1·032	87.14	3·77	9·09	12·87	. .....	62	Genuine.
.. ..	1·031	87·23	3·80	8·97	12·77	.....	63	"
....	1·032	87·97	3·02	9·01	12·03	.....	64	Genuine; under average in fat.
....	1·031	87·15	3·89	8.96	12 85	....	65	Genuine.
.....	1·033	88·86	2·48	8·66	11·14	.....	66	Partly skimmed.
.....	1·031	87·22	3·90	8·88	12·78	....	67	Genuine.
....	1·032	86·98	3·96	9·06	13·02	.....	68	Genuine.
.....	1·030	86·88	4·19	8·93	13·12	.....	69	"
....	1·033	88·34	2·46	9·20	11·66	.....	70	Partly skimmed.
.....	1·032	86·39	4·19	9·42	13·61	....	71	Genuine.
Only one sample....	1·028	88·82	3 58	7·60	11·19	....	72	Watered.
....	1·031	87·52	3·63	8·85	12·48	....	73	Genuine.
.. ..	1·032	88·66	2·58	8·76	11·34	.. ..	74	Partly skimmed.
....	1·032	88·59	2·84	8·56	11·41	.....	75	" "
....	1·031	87·25	4 05	8·70	12·75	....	76	Genuine.
.....	1·033	86·68	4·01	9 31	13·32	.....	77	"
. .....	1·032	87·66	3·35	8·99	12·34	.....	78	" under avg. in fat.
.....	1·033	86·38	4·06	9·56	13·62	....	79	"
....	1·0314	87·01	3·69	9·30	12·99	....	80	"
....	1·032	88·54	2·93	8·53	11·46	.....	81	Probably partly skim'd
... .	1·0304	87·28	3·42	9·30	12·72	. ...	82	Gen., below avg. in fat.
....	1·0314	87·41	3·31	9·28	12·59	....	83	" "
. ...	1·0304	87·15	3·76	9·08	12·84	... .	84	Genuine.
.....	1·0314	87·03	3·52	9·35	12·87	.....	85	"
....	1·0324	86·55	4·02	9·43	13·45	....	86	"
....	1·0314	86·86	3·71	9·33	13·04	....	87	"
.....	1·0304	87·11	3·63	9·16	12·79	.. . .	88	"
.. ..	1·0324	86·25	4·33	9·32	13·65	.....	89	"
....	1·0304	87·29	3·68	9·03	12·71	....	90	"

RECORD OF FOOD SAMPLES—MILK—ANALYZED BY

Date of Collection.	Nature of Sample.	Number of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher.
1907.			*District of Montreal—J. J. Costigan, Inspector.*			
July 29	Milk..	32846	Ernest Cousins, Montreal, P.Q.	1 pint,	4c.	
" 29	"	32847	A. Hobbs, St. Laurent, P.Q.	"		
" 29	"	33848	N. Robinovitch, 1064 St. Lawrence, Montreal.	"		
" 29	"	32849	F. L. Mott, 147 Abbott Ave., Westmount.	"		
" 29	"	32850	O. L. Jasmin, St. Laurent	"		
" 29	"	32851	J. Hannah, Youville	"		
" 29	"	32852	J. McEwan, 1073 Esplanade, Ville St. Louis.	"		
" 29	"	32853	H. Groulx, St. Laurent, P.Q	"		
" 29	"	32854	John Duncan & Co., Drummond St., Montreal.	"		
" 29	"	32855	A. Muir, Cote St. Paul..	"		
" 29	"	32856	R. Gordon, 90 Fairmount, Ville St. Louis.	"		
" 29	"	32857	John Huckle, 1680 St. Urbain, Ville St. Louis.	"		
" 29	"	32858	Standard Dairy Co., Laganchetiére st.	"		
" 29	"	32859	R. Nicholson, Lachine Locks	"		
" 29	"	32860	C. Muir, 371 Clark, Ville St. Louis..	"		
" 29	"	32861	A. C. Struthers, 890 Esplanade, Ville St. Louis.	"		
" 29	"	32862	W. J. Hodge, St. Laurent, P.Q.	"		
" 29	"	32863	Geo. Wilson, 686 Albert, Montreal..	"		
" 29	"	32864	J. Varnier, Verdun	"		
" 29	"	32865	J. C. Hebert, 4 Fairmount, Ville St. Louis.	"		
Aug. 13	"	32866	E. Lajeunesse, 27 Pontiac, Montreal.	"		
" 13	"	32867	John McWillie, Youville	"		
" 13	"	32868	Jno. Staines, 1746 St. Urbain, Montreal.	"		
" 13	"	32869	Emile Guay, 1322 St. Dominique, Montreal.	"		

INLAND REVENUE DEPARTMENT LABORATORY—*Continued.*

Inspector's Report.	Results of Analysis.					Name of Analyst.	No. of Sample.	Remarks.
	Specific Gravity at 15° C.	Water.	Butter Fat.	Other Solids.	Total Solids.			
		p. c.	p. c.	p. c.	p. c.			
All of these vendors are duly licensed milkmen for the city of Montreal. Samples were taken from the different wagons whilst on round.	1·0325	87·19	4·10	8·71	12·82	.....	32846	Genuine.
" " ..	1·0315	88·01	3·52	8·48	11·99	....	32847	"
" " ..	1·036	88·08	3 24	8·67	11·92	.....	32848	" below average in fat.
" " ..	1·0336	87·48	3·68	8·84	12·52	.....	32849	Genuine.
" " ..	1·0293	88·04	3·81	8·10	11·91	.....	32850	" under average in total solids.
" " ..	1·0333	87·84	3·16	8·99	12·15	.....	32851	Genuine; under average in fat.
" " ..	1·0322	87·74	3·56	8·70	12·26	.. ..	32852	Genuine.
" " ..	1·0322	88·16	3·29	8·55	11·85	.....	32853	" under average in fat.
Put up in pint bottle.	1·0322	88·15	3·31	8·54	11·85	.....	32854	Genuine; under average in fat.
.....	1·0312	87·96	3·54	8·51	12·04	.....	32855	Genuine.
.....	1·038	87·66	3·66	8·68	12 34	.....	32856	"
All of these vendors are licensed for city of Montreal with exception of Sample No. 32864 who is licensed for Verdun alone. All samples taken from wagons whilst on round.	1·034	87·43	3·38	9·19	12·57	....	32857	" under average in fat.
" " ..	1·0275	88·84	3·62	7·54	11·16	.....	32858	Probably genuine; low in non-fat solids.
" " ..	1·034	88·19	3·13	8·68	11·81	... .	32859	Probably genuine; below average in fat.
" " ..	1·0293	88·58	3·49	7·92	11.42	.....	32860	Genuine; under average in non-fat solids.
" " ..	1·033	88·50	3·33	8·17	11·50	....	32861	Genuine; below average in total solids.
" " ..	1·0322	88·09	3·26	8·64	11·91	....	32862	Genuine; under average in fat.
" " ..	1·0333	87·94	3·28	8·78	12·06	.....	32863	Genuine; under average in fat.
" " ..	1·034	88·28	3·23	8·49	11·72	....	32864	Genuine; under average in fat.
" " ..	1·0312	86·67	4·72	8·61	13·32	.. ..	32865	Genuine.
" " ..	1·032	88·19	3·43	8·38	11·81	... .	32866	" below average in total solids.
" " ..	1·028	88·36	3·80	7·84	11·64	....	32867	Genuine; under aver; age in non-fat solids
" " ..	1·0303	87·51	3·82	8·67	12·49	....	32868	Genuine.
.....	1·032	87·98	3·29	8·72	12·01	.....	32869	Genuine, below average in fat.

RECORD OF FOOD SAMPLES—MILK—ANALYZED BY

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher.
1907.			*District of Montreal—J. J. Costigan, Inspector—Con.*			
Aug. 13	Milk..	32870	Vernon Dairy Co., 199a Laval Ave., Montreal.	1 pint,	4c..	.....
" 13	"	32871	R. Lackcovitski, 181 Cadieux.....	"	....	.....
" 13	"	32872	Guy & Frere, Longue Point.....	"	....	.....
" 13	"	32873	Louis Katzman, 214 St. George.....	"	....	.....
" 13	"	32874	Joseph Crevier, St. Laurent, P.Q.....	"	....	.....
" 13	"	32875	Edward Nockle, 1513 St. Hubert, Montreal.	"	....	.....
			District of Ottawa—J. A. Rickey, Inspector.			
" 1	"	34041	Geo. W. Hicks, Ottawa.....	24 oz.,	5c...	J. & Mrs. A. Moffett, and T. Bain, Merivale.
" 1	"	34042	H. Macartney, Billings Bridge.....	"	....	Vendor.. .....
" 1	"	34043	Mockett Bros., Gloucester.....	"	....	" .....
" 1	"	34044	Graham Bros., Britannia.....	"	....	" .....
" 1	"	34045	R. Magee, Britannia.....	"	....	" .....
" 1	"	34046	Wm. Gladman.....	"	....	" .....
" 1	"	34047	E. Honeywell, Westboro.....	"	....	" .....
" 1	"	34048	Jas. Sorley.....	"	....	" .....
" 1	"	34049	J. D. Anderson, Gloucester.....	"	....	" .....
" 2	"	34050	R. Johnson, Hull.	"	....	Wm. Armstrong, Hull.
" 2	"	34051	F. Desrochers, Hull.....	"	....	Vendor.....
" 2	"	34052	Jno. G. Rouleau, Hull.....	"	....	" .....
" 2	"	34053	Jno. R. Armstrong, Hull..	"	....	" .....
" 2	"	34054	Thos. Dennison, Hull.....	"	....	" .....
" 3	"	34055	Ottawa Dairy Co., Ottawa.....	"	....	Several dairymen ....
" 6.	"	34056	Wm. Duffy, Carleton Place	24 oz.,	6c..	Vendor .....
" 6.	"	34057	Marion Stearns, "	"	6c..	" .....
" 6.	"	34058	C. W. Young, "	"	6c..	" .....
" 6.	"	34059	J. Hendry, "	"	6c..	" .....
" 6.	"	34060	Salmon Bros., Smith's Falls	"	6c..	" .....
" 6.	"	34061	Beckwith Dairy, "	"	6c..	" .....
" 6.	"	34062	Jas. Edmons, "	"	6c..	" .....
" 6.	"	34063	J. L. Davis, "	"	6c..	" .....
" 6.	"	34064	Beckwith Dairy, "	"	6c..	" .....
" 6.	"	34065	Coughlin Bros., "	"	6c..	" .....
" 6.	"	34066	Beckwith Dairy, "	"	6c..	" .....

SESSIONAL PAPER No. 14

INLAND REVENUE DEPARTMENT LABORATORY.—*Continued.*

Inspector's Report.	Result of Analysis.					Name of Analyst.	No. of Sample.	Remarks.
	Specific Gravity at 15° C.	Water.	Butter Fat.	Other Solids.	Total Solids.			
		p.c.	p.c.	p.c.	p.c.			
....	1·032	88·53	3·28	8·19	11·47	.....	32870	Genuine, below average in fat.
.....	1·033	88·70	2·81	8·48	11·29	.....	32871	Partly skimmed.
....	1·030	88·80	2·33	8·87	11·20	....	32872	Doubtful, below average in fat.
....	1·0306	87·47	4·08	8·45	12·53	.. ..	32873	Genuine.
.....	1·0288	88·48	3·61	7·91	11·52	.....	32874	" under average in non-fat solids.
....	1·0301	88·06	3·90	8·04	11·94	....	32875	" "
Taken from delivery wagon on street.	1·032	89·03	2·87	8·09	10·97	.....	34041	Genuine, under average in total solids.
" " ..	1·0306	87·80	3·58	8·62	12·19	....	34042	Genuine.
" " ..	1·0316	87·51	3·68	8·81	12·49	.....	34043	"
" " ..	1·0306	87·05	4·39	8·56	12·95	.....	34044	"
" " ..	1·0319	87·50	3·88	8·62	12·50	....	34045	"
" " ..	1·0319	87·34	3·73	8·93	12·66	....	34046	"
" " ..	1·0306	87·74	3·64	8·62	12·26	....	34047	"
" " ..	1·0306	87·18	3·99	8·82	12·81	....	34048	"
" " ..	1·0309	87·26	4·07	8·67	12·74	.....	34049	"
" " ..	1·0327	87·61	3·28	9·11	12·39	....	34050	" under average in fat.
" " ..	1·033	88·07	3·03	8·90	11·93	.....	34051	" "
" " ..	1·0322	87·16	4·05	8·79	12·84	.....	34052	Genuine.
" " ..	1·0312	87·93	3·69	8·38	12·07	.....	34053	"
" " ..	1·031	87·29	4·05	8·66	12·71	.....	34054	"
Taken from wholesale delivery wagon. Sold in bulk only.	1·032	87·81	3·54	8·66	12·20	....	34055	"
Taken from delivery wagon on street.	1·0312	87·55	3·88	8·57	12·45	.....	34056	Genuine.
" " ..	1·031	88·08	3·60	8·31	11·91	.....	34057	Genuine ; below average in total solids.
One bottle broken...	1·032	87·77	3·60	8·63	12·23	.....	34058	Genuine.
" " ..	1·0299	87·58	3·90	8·52	12·42	.....	34059	"
" " ..	1·030	87·97	3·54	8·49	12·03	....	34060	"
Taken from waggon on street. Have 2 dairy farms, owned by syndicate, J. McEwen preside't.	1·032	87·91	3·32	8·71	12·03	....	34061	" below average in fat.
Taken from wagon on street.	1·030	88·09	3·43	8·47	11·90	....	34062	" "
" " ..	1.031	88·17	3·41	8·42	11·83	....	34063	" "
Taken from wagon on street. Same source as No. 34061, only from a different delivery wagon.	1·031	88·24	3·26	8·49	11·75	..... .	34064	" "
Taken from wagon on street.	1·0299	88·10	3·83	8·07	11·90	.....	34065	Genuine ; under average in total solids.
Taken from wagon on street. Sample taken from dairy farm No. 2. Same Co. as Nos. 34061 and 4, J. McEwen president, formerly called Moirs dairy.	1·031	86·75	4·35	8·90	13·25	....	34066	Genuine.

RECORD OF FOOD SAMPLES—MILK—ANALYZED BY

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher.
1907.			*District of Ottawa—J. A. Rickey, Inspector.*			
Aug. 8.	Milk.....	34067	Jas. Brady, Perth.....	24 oz.	6c..	Vendor. .....
" 8.	"	34068	Jno. A. Chaplin, Perth.....	"	6c..	" .....
" 10.	"	34069	R. A. Watt, Perth.....	"	6c..	" .....
" 10.	"	34070	Ottawa Dairy Co., Ottawa.....	"	6c..	Several dairymen.....
			District of Kingston—J. Hogan, Inspector.			
July 24.	"	33001	D. Murray, Kingston.....	1 pint,	3c..	Vendor .....
" 24.	"	33002	C. McConville, "	"	3c..	" .....
" 24.	"	33003	S. Kirk, "	"	3c..	" .....
" 24.	"	33004	J. Acton, "	"	3c..	" .....
" 24.	"	33005	R. Baker, "	"	3c..	" .....
" 24.	"	33006	W. Gardeners, "	"	3c..	" .....
" 24.	"	33007	A. B. Gibbons, "	"	3c..	" .....
" 24.	"	33008	J. Gillespie, Kingston.....	1 "	3c..	" .....
" 24.	"	33009	G. F. Murton "	1 "	3c..	" .....
" 24.	"	33010	T. J. Polley "	1 "	3c..	" .....
" 25.	"	33011	W. Wood "	1 "	3c..	" .....
" 25.	"	33012	J. Joyce "	1 "	3c..	" .....
" 25.	"	33013	H. Retten "	1 "	3c..	" .....
" 25.	"	33014	J. Barrett "	1 "	3c..	" .....
" 25.	"	33015	J. H. Waller "	1 "	3c..	" .....
" 25.	"	33016	J. J. Wilmot "	1 "	3c..	" .....
" 25.	"	33017	D. D. Rodgers "	1 "	3c..	" .....
" 25.	"	33018	J. Snook "	1 "	3c..	" .....
" 25.	"	33019	A. E. Weller "	1 "	3c..	" .....
" 26.	"	33020	J. W. Andrews, Belleville Front.....	1 "	3c..	City Dairy .....
" 26.	"	33021	T. H. Waldron, Belleville.....	1 "	3c..	Vendor.....
" 26.	"	33022	J. Little "	1 "	3c..	" .....

INLAND REVENUE DEPARTMENT LABORATORY—*Continued.*

Inspector's Report.	Results of Analysis.					Name of Analyst.	No. of Sample.	Remarks.
	Specific Gravity at 15° C.	Water.	Butter Fat.	Other Solids.	Total Solids.			
	p. c.	p. c.	p. c.	p. c.	p. c.			
Taken from wagon on street.	1·030	87·87	3·77	8·36	12·13	.....	34067	Genuine; under average in non-fat solids.
" " ..	1·030	87·73	3·84	8·43	12·27	....	34068	" "
" " ..	1·030	87·63	3·60	8·77	12·37	....	34069	Genuine.
Taken from retail delivery wagon. Sold only in pint and quart bottles.	1·030	87·77	3·45	8·78	12·23	.....	34070	"
Taken from wagon on street.	1·0316	88·09	3·55	8·36	11·91	.....	33001	Genuine; under average in total solids.
" " ..	1·0338	88·12	3·28	8·60	11·88	....	33002	Genuine; under average in fat.
" " ..	1·0327	87·71	3·84	8·45	12·29	. ...	33003	Genuine.
" " ..	1·0316	88·75	3·01	8·24	11·25	.....	33004	" "
Duplicate broken in transit.	1·0338	87·30	3·67	9·03	12·70	.....	33005	"
Taken from wagon on street.	1·0316	87·34	4·23	8·43	12·66	....	33006	"
" " .	1 0316	87·63	3·76	8·61	12·37	.....	33007	"
" " ..	1 0327	87·82	3·30	8·68	12·18	....	33008	Genuine: under average in fat.
" " ..	1·0338	87·87	3·28	8·85	12·13	.....	33009	" "
" " ..	1·0316	87·83	3·54	8·63	12·17	.....	33010	Genuine.
As brought to factory at Kingston from Pittsburg township.	1·0314	87·47	4·00	8·45	12·45	.....	33011	"
As brought to factory from Kingston township.	1·0255	87·58	5·58	6·84	12·42	.....	33012	Genuine; under average in non-fat solids.
As brought to factory from Pittsburg township.	1·0319	87·82	3·68	8·52	12·10	....	33013	Genuine.
" " .	1·0311	87 73	3·78	8·49	12·27	.....	33014	"
" " ..	1·0306	87·94	3·47	8·59	12·06	....	33015	"
" " ..	1·0317	88·04	3·39	8·57	11·97	....	33016	Genuine; under average in fat.
" " ..	1·0306	87·54	3·82	8·65	12·47	.....	33017	Genuine.
As brought to factory from Kingston township.	1·0295	88·22	3·46	8·33	11·78	.....	33018	Genuine; under average in total solids.
Taken from wagon on street.	1·0306	88·31	3·13	8·57	11·69	.....	33019	Genuine; under average in fat.
" " .	1·033	87·96	3·26	8·78	12·04	....	33020	" "
" " ..	1·033	87·02	4·02	8·96	12·98	.....	33021	"
" " ..	1.0319	87·33	3·82	8·85	12·67	.....	33022	"

RECORD OF FOOD SAMPLES—MILK—ANALYZED BY INLAND

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher.
1907.			*District of Kingston—J. Hogan, Inspector.*			
July 26.	Milk.....	33023	W. Inshworth, Bellville.....	1 pint,	3c..	Vendor .....
" 26.	"	32024	J. Boyd "	1 "	3c..	" .....
" 26.	"	33025	J. Knox "	1 "	3c..	" .....
" 26.	"	33026	Don. Belleker "	1 "	3c..	" .....
" 26.	"	33027	J. Ketchnson "	1 "	3c..	" .....
" 26.	"	33028	J. Cooper "	1 "	3c..	" .....
" 27.	"	33029	T. B. Bulger, Cobourg.....	1 "	3c..	" .....
" 27.	"	33030	G. A. Workman "	1 "	3c..	" .....
			District of Toronto—H. J. Dager, Inspector.			
" 7	"	33281	City Dairy Co., Spadina Crescent, Toronto.	"	....	" .....
" 7	"	33282	John Gibb, 162 Broadview, Toronto..	"	....	Andrew Grant, Scarboro, Ont.
" 7	"	33283	W. W. Pett, 9 Munroe St. "	"	....	J. J. Weir, Scarboro, Ont.
" 7	"	33284	J. Mills, 316 Sackville St. "	"	...	Vendor .....
" 7	"	33285	S. Price & Son, Queen St. East "	"	....	" .....
" 7	"	33286	Brennand's Dairy, 314 Gerrard St. East, Toronto.	"	....	John Trull, Darlington P.O.
" 7	"	33287	J. B. Dunlop, 212 Wilton Ave., Toronto.	"	....	Brennand's Dairy.....
" 7	"	33288	John Hummell, 99 Parliament St., Toronto.	"	....	Woburn Dairy Co, Scarboro, Ont.
" 7	"	33289	John Laughlin, 249 Bellwoods Ave., Toronto.	"	....	'Hawkins' (a farmer), Lambton Mills.
" 7	"	33290	M. Factor, 53 Elm St., Toronto.....	"	....	Price & Son, Toronto..
" 8	"	33291	F. Halleawell, 190 McCaul St., Toronto.	"	....	Wilson (a farmer), of Scarboro.
" 8	"	33292	E. L. Craggs, 196 Clinton St., Toronto.	"	....	H. Decoff, Downsview, P. O.
" 8	"	33293	Geo. Brown, 141 Manning Ave., Toronto.	"	....	Wilson (a farmer), at Emery P.O.
" 8	"	33294	J. R. Benson, 290 Bathurst St., Toronto.	"	....	B. Boylen, Downsview P.O.
" 8	"	33295	H. Taylor, 245 Church St., Toronto.	"	....	J. Baird, Scarboro....
" 13	"	33296	Pure Milk Co., Ltd., 181 John St., North Hamilton.	"	....	Several farmers.....
" 13	"	33297	J. O. Rykman, West Cottage, Aberdeen Ave., North Hamilton.	"	....	J. Quinn (a farmer) ...
" 13	"	33298	W. Goodbrand, Waterdown P.O.....	"	....	Vendor .....
" 13	"	33299	Jno. Rosberry, Cor. York and Park Sts., Hamilton.	"	....	" .....

SESSIONAL PAPER No. 14

REVENUE DEPARTMENT LABORATORY—*Continued.*

Inspector's Report.	Results of Analysis.					Name of Analyst.	No. of Sample.	Remarks.
	Specific Gravity at 15° C.	Water.	Butter Fat.	Other Solids.	Total Solids.			
	p. c.	p. c.	p. c.	p. c.	p. c.			
Taken from wagon on street.	1·0297	88·98	3·31	7·71	11·02	.....	33023	Genuine; under average in total solids.
" " ..	1·0319	87·27	4·25	8·48	12·73	....	33024	Genuine.
As brought to factory	1·0341	87·89	3·42	8·69	12·11	.....	33025	Genuine; under average in fat.
" " ..	1·0308	89·14	3·22	7·64	10·86	.....	33026	Genuine, under average in total solids.
Duplicate broken in transit.	1·031	88·11	3·68	8·21	11·89	.....	33027	Genuine; under average in non-fat solids.
As brought to factory	1·033	87·87	3·56	8·58	12·14	.....	33028	Genuine.
Taken from wagon on street.	1·0319	88·39	3·18	8·43	11·61	.. ..	33029	Genuine; under average in total solids.
" " ..	1·0297	86·11	5·57	8·32	13·89	.....	33030	Genuine.
Sample taken from bottle on wagon on street.	1·031	88·55	3·11	8·34	11·45	....	33281	Genuine; under average in fat.
Sample taken from 5 gallon can of wagon on street.	1·030	88·78	3·20	8·01	11·21	.....	33282	" "
" " ..	1·032	89·73	2·70	7 56	10·26	....	33283	Watered.
" " ..	1·031	89·11	2·76	8·12	10·88	.....	33284	Partly skimmed.
Taken out of bottle of wagon on street.	1·031	88·89	3·01	8·10	11·11	.....	33285	Genuine; below average in fat.
Taken from 5 gallon can of wagon on street.	1·030	88·97	3·10	7·91	11·01	.....	33286	Watered.
" " ..	1·034	88·78	2·39	8·82	11·21	.....	33287	Partly skimmed.
At vendor's dairy premises.	1·030	89·23	3·30	7·47	10·77	....	33288	Watered.
" " ..	1·031	89·66	2·33	8·01	10·34	....	33289	Partly skimmed.
" " ..	1·030	88·83	2·99	8·18	11·17	....	33290	Doubtful; probably partly skimmed.
Sample taken from 5 gallon can on wagon on street.	1·028	89·40	2·66	7·94	10·60	.....	33291	Watered.
Sample taken from 5 gallon can at vendor's premises.	1·031	89·03	2·32	8·65	10·97	.....	33292	Partly skimmed.
No. of farmer's can is No. 10.	1·029	89·01	2·74	8·24	10·98	.....	33293	"
. .. .	1·032	88·38	2·69	8·93	11·62	....	33294	"
. .....	1·028	88·98	3·15	7·87	11·02	.....	33295	Watered.
.....	1·0297	88·43	3·50	8·07	11·57	.....	33296	Genuine; under average in total solids.
.....	1·030	89·15	3·18	7·67	10·85	.....	33297	Watered.
. .....	1·030	89·81	1 76	8·43	10·19	....	33298	Skimmed.
... .	1·029	90·18	2 69	7·13	9·82	....	33299	Watered.

RECORD OF FOOD SAMPLES—MILK—ANALYZED BY

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher.
1907.			*District of Toronto—H. J. Dager, Inspector.*			
Aug. 13	Milk	33300	Donald McLean, Clappson Corners P.O.	1 pint,	5c.	Vendors
" 13	"	33301	James Newman, Atlantic House, Hamilton.	"		"
" 13	"	33302	J. H. Cline, 161 Markland St., Hamilton.	"		C. E. Cochrane, Hamilton, Ont.
" 13	"	33303	Adam Inch, Hamilton P.O.	"		Vendor
" 13	"	33304	J. Anton, 124 Wellington St., North Hamilton.	"	5c.	M. Lyons, Rockchappel, Ont.
" 13	"	33305	Hamilton Dairy Co., Vine St., Hamilton.	"		Several farmers
" 13	"	33306	Alfred Hack, St. Catharines.	"		Vendor
" 13	"	33307	Jno. Smith, City View Dairy, St. Catharines.	"		A. Singer, St. Catharines P.O.
" 13	"	33308	James Haynes, St. Catharines.	"		Vendor
" 13	"	33309	A. C. Bracken, Box 472, St. Catharines.	"		"
" 13	"	33310	Chas. Urlocker, Merritton P.O.	"		Hoover & Patterson, Thorold P.O.
			District of London—T. Kidd, Inspector.			
July 26	Milk	30376	Samuel Bisset, Goderich	1 pint,	5c.	Vendor
" 26	"	30377	John Porter.	"		"
" 27	"	30379	Daniel Grumet, Harperhay	"		Daniel Grumet, Tuckersmith Tp.
" 27	"	30380	McIntosh Bros., Seaforth.	"		Vendors, McKillops Township.
" 29	"	30382	W. T. Somers, Stratford.	"		W. T. Somners, Downey Township.
" 29	"	30383	Wm. Cardwell, Stratford.	"		Wm. Cardwell, Eastop P.O.
" 29	"	30385	W. P. Thistle, St. Mary Road.	"		Vendor
" 29	"	30386	Richard McNamara, Stratford.	"		"
" 29	"	30391	Henry Mossops, London, Ont.	"		"
" 30	"	30393	Glover Bros., Glendola P.O., London.	"		"
" 30	"	30394	J. W. Wilkinson, London.	"		"
" 30	"	30395	Jno. Byne, Sarnia.	"		"
" 31	"	30396	James Sinclair, Sarnia Township.	"		"
" 31	"	30397	Jerid Moore, Sarnia Township.	"		"
" 31	"	30398	Frank O'Donnell, Sarnia, P.O.	"		"
July 31	"	30400	W. A. McGearchey, Sarnia City Dairy	"		"
Aug. 1	"	30401	A. B. Ellarbic, Chatham Road	"		"

SESSIONAL PAPER No. 14

INLAND REVENUE DEPARTMENT LABORATORY—*Continued.*

Inspector's Report.	Results of Analysis.					Name of Analyst.	No. of Sample.	Remarks.
	Specific Gravity at 15° C.	Water.	Butter Fat.	Other Solids.	Total Solids.			
		p. c.	p. c.	p. c.	p. c.			
....	1·0306	87·69	3·87	8·44	12·31	....	33300	Genuine; under average in non-fat solids.
... .	1·034	88·28	3·12	8·60	11·72	....	33301	Genuine; under average in fat.
.....	1·030	88·89	3·18	7·93	11·11	....	33302	" "
..... .	1·0289	87·60	4·03	8·37	12·40	.. . .	33303	Genuine; under average in non-fat solids.
.....	1·027	90·22	2·47	7·30	9·77	.....	33304	Watered.
.....	1·0289	88·91	3·02	8·07	11·09	.....	33305	Doubtful, probably watered.
.....	1·030	86·95	4·63	8·42	13·05	.....	33306	Genuine.
.....	1·0311	87.97	3·23	8·80	12·03	. .....	33307	Genuine, below average in fat.
.. ..	1·0322	87·55	3·38	9·07	12·45	. ...	33308	Genuine, below average in fat.
....	1·0300	87·10	4·33	8·57	12·90	....	33309	Genuine.
....	1 0327	87·20	3·61	9·19	12·80	.....	33310	"
Taken from large can on his wagon.	1·0299	86·92	4·53	8·55	13·08	.....	30376	Genuine.
Taken from quart bottle in his wagon	1·0306	88·15	3·25	8·60	11·85	.....	30377	Genuine, under average in fat.
Taken from large can on his wagon.	1·0330	86·21	4·64	9·15	13·79	....	30379	Genuine.
" " ..	1·0319	88·08	3·19	8·73	11·92	.....	30380	Genuine, under average in fat.
" " ..	1·0309	86·96	4·28	8·76	13·04	.....	30382	Genuine.
Taken from large can on vendor's wagon.	1·0319	87·52	3·67	8·81	12·48	.....	30383	"
.....	1·033	87·95	3·39	8·66	12·05	.....	30385	" under average in fat.
... .	1·032	87·45	3·39	8·67	12·06	.....	30386	Genuine. "
Bought, from vendor on street.	1·0314	87·45	3·62	8.93	12·55	....	30391	"
Taken from vendor's wagon on street.	1·030	88·32	3·40	8·27	11·67	....	30393	Genuine, under average in total solids.
.....	1·031	88·65	3·13	8·22	11·35	....	30394	Genuine, under average in fat.
" " ..	1.032	88·15	3.31	8·58	11·89	. .. .	30395	" "
....	1·034	87·99	3·17	8 83	12·00	....	30396	" "
.....	1·034	88·08	3·16	8·75	11·91	.....	30397	" "
Taken from vendor's wagon on street.	1·037	88·03	3.42	8.55	11·97	....	90398	"
.....	1·0314	88·78	3·78	8·44	12·22	.....	30400	Genuine.
One bottle broken. Taken from can in wagon on street.	1·034	87·90	3·20	8 90	12·10	.....	30401	Genuine; below average in fat.

RECORD OF FOOD SAMPLES—MILK—ANALYZED BY

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher.
1907.			*District of London—T. Kidd, Inspector.*			
Aug. 1	Milk	30402	Huff Bros., Chatham	1 pint,	5c.	Vendor
" 1	"	30403	C. E. Lister, City Dairy, Chatham	"	"	"
" 3	"	30406	R. W. Cook, Windsor	"	"	"
" 3	"	30407	Michael O'Brine, Windsor	"	"	"
" 3	"	30408	C. T. Brundell, Windsor	"	"	"
" 3	"	30409	Lawyor Bros., Tecumseth P. O. Ont.	"	"	"
" 13	"	30412	Henry Norman, St. Thomas	"	"	"
" 13	"	30413	Jno. Henderson, Yarmot Township	"	"	"
" 13	"	30414	Fred Abbott, St. Thomas	"	"	"
" 14	"	30420	Thos. Heslop, Ingersoll	"	"	"
" 14	"	30421	Jerry Pickard, Ingersoll	"	"	"
			District of Calgary—R. W. Fletcher, Inspector.			
" 17	"	28801	T. W. Tollis, Medicine Hat	1 pint,	5c.	
" 17	"	28802	Cullen & Ballyantine, Calgary	"	"	
" 17	"	28803	McCutcheon Convey, Calgary	"	"	
" 17	"	28804	L. N. Jones, Calgary	"	"	
" 17	"	28805	C. T. Eanwiser, Calgary	"	"	
" 17	"	28806	Henry Poffenroth, Calgary	"	"	
" 17	"	28807	B. J. Newcombe, Calgary	"	"	
" 17	"	28808	Chas. Carlyle, Calgary	"	"	
" 17	"	28809	J. E. McDonald, Calgary	"	"	
" 17	"	28810	D. D. Houghton, "	"	"	
17	"	28811	Thos. Laycock, "	"	"	
" 17	"	28812	A. Cliffea, "	"	"	
" 21	"	28813	Rockview Dairy, "	"	"	
" 21	"	28814	B. J. Newcombe, "	"	"	
" 21	"	28815	A. J. Pratt, "	"	"	
" 21	"	28816	K. Cullen, "	"	"	
" 21	"	28817	Calgary Dairy Co., "	"	"	H. Cranston, Calgary.
" 21	"	28818	W. J. Tregillus, "	"	"	

SESSIONAL PAPER No. 14

INLAND REVENUE DEPARTMENT LABORATORY—*Continued.*

Inspector's Report.	Results of Analysis.					Name of Analyst.	No. of Sample.	Remarks.
	Specific Gravity at 15° C.	Water.	Butter Fat.	Other Solids.	Total Solids.			
		p. c.	p. c.	p. c.	p. c.			
Taken from can in wagon in street.	1·034	88·20	3·04	8·75	11·79		30402	Genuine; below average in fat.
" "	1·0312	87 96	3·34	8·70	12·04		30403	Genuine; below average in fat.
	1·0322	86·93	4·22	8·85	13·07		30406	Genuine.
	1·0312	87·56	4·00	8·63	12·63		30407	"
	1·0322	87·49	3·76	8·75	12·51		30408	"
	1·0312	85·84	5·64	8·54	14·18		30409	"
	1·0325	88·07	3·24	8·69	11·93		30412	Genuine; below average in fat.
	1·0312	87·08	4·29	8·63	12·92		30413	Genuine.
	1·0290	87·79	4·16	8·05	12·21		30414	"
	1·032	87·44	3·54	9·02	12·56		30420	"
	1·031	86·43	4·77	8·80	13·57		30421	"
	1·032	86 98	4·00	9·02	13·02	Dr. C. J. Fagan.	28801	Genuine.
	1 025	81·20	9·75	9·05	18·80	"	28802	"
	1·032	86·90	3·81	9·29	13·10	"	28803	"
	1·032	87·00	3·60	9·40	13·00	"	28804	"
	1·034	87·20	3·44	9·36	12·80	"	28805	"
	1 026	84·50	7·37	7·13	14·50	"	28806	Low in solids not fat. Probably cream added.
Driver No. 1	1·031	86.65	3·84	9·51	13·35	"	28807	Genuine.
	1·032	87·40	3 35	9·25	12·60	"	28808	Genuine.
	1·030	86·10	4·80	9·10	13·90	"	28809	"
	1·030	84·45	6·40	9·15	15·55	"	28810	"
	1·032	86·09	4·23	9·68	13·91	"	28811	"
	1·031	85·25	5·50	9·25	14·75	"	28812	"
	1.033	87·40	3·25	9·35	12 60	"	28813	"
Driver No. 2	1·033	86·55	4·18	9·27	13·45	"	28814	"
	1·033	86·75	3·81	9·44	13·25	"	28815	"
	1·030	87·20	3·66	9·14	12·80	"	28816	"
	1·031	86·40	4·59	9·01	13·60	"	28817	"
	1·032	87·90	3·00	9 10	12·10	"	22818	"

RECORD OF FOOD SAMPLES—MILK—ANALYZED BY

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher.
1907.			*District of Calgary—R. W. Fletcher, Inspector*—Concluded.			
Aug. 22	Milk	28819	Fitzroy, Callesson & Morphett, Calgary	1 pint	5c	
" 30	"	28820	Doherty & Hare, Edmonton	"	"	
" 30	"	28821	W. W. Rowley, Calgary	"	"	
" 30	"	28822	H. Wonnacothe, "	"	"	
" 30	"	28823	J. McLin, "	"	"	
" 30	"	28824	E. Smart, "	"	"	
" 30	"	28825	Cancelled			
" 31	"	28826	A. Berg, Fort Saskatchewan	1 pt.	5c	
" 31	"	28827	Mrs. Geo. Becker, Fort Saskatchewan.	"	"	
" 31	"	28828	Mrs. David Simpson, Fort Sask	"	"	
" 31	"	28829	Mrs. W. J. Howard, "	"	"	
Sept. 3	"	28830	A. B. Everts, Wetaskiwin	"	"	
" 3	"	28841	Axie Bengston, Wetaskiwin	"	"	
			District of British Columbia—E. B. Parkinson, Inspector.			
July 29	"	32102	Vancouver Dairy, 965 Seymour St., Vancouver.	1 pint,	5c	W. Williamson, Sea Island.
" 29	"	32103	J. Metcalfe, 998 Richards St., Vancouver.	"		Murphy, Sea Island
" 29	"	32104	Richmond Dairy Association, Abbott St., Vancouver.	"		Not known
" 29	"	32105	Richmond Dairy Association, Pender St., Vancouver.	"		"
" 29	"	32106	W. Ratcliff, 2740 Prince Edward St., Vancouver.	"		Garvin Bros., Vancouver.
" 30	"	32107	Edmund Hicks, 144 Lansdowne Ave., Vancouver.	"		Not known
" 30	"	32108	J. S. Murphy, Eburne, B.C	"		A. McRae, Lulu Island
" 30	"	32109	J. Metcalfe, 998 Richards St., Vancouver.	"		Murphy, Sea Island
" 30	"	32110	C. H. Boyer, 1214 Richards St., Vancouver.	"		Not known
" 30	"	32111	Richmond Dairy Association, Pender St., Vancouver.	"		D. Jureit, Steveston, B.C.
" 30	"	32112	" "	"		J. Smith, Steveston, B.C.

SESSIONAL PAPER No. 14

INLAND REVENUE DEPARTMENT LABORATORY—*Continued.*

Inspector's Report.	Results of Analysis.					Name of Analyst.	No. of Sample.	Remarks.
	Specific Gravity at 15° C.	Water.	Butter Fat.	Other Solids.	Total Solids.			
		p. c.	p. c.	p. c.	p. c.			
....	1·033	88·00	2·83	9 17	12·00	Dr. C. J. Fagan.	28819	Below average in butter fat.
Milkman, driver No. 2.	1·032	85·90	4·81	9·29	14·10	" .	28220	Genuine.
Milkman, driver No. 1.	1·034	87·00	3·70	9·30	13·00	" .	28821	"
Milkman	1·032	85·70	5·10	9·20	14 30	" .	28822	"
"	1·015	72·87	18·92	8·21	27·13	" .	28823	Partly cream.
"	1·027	85·60	6·00	8·40	14·40	"	28824	Genuine.
....	.....	....	.. ..	.....	....	.....	. ...	
Milkman	1·029	86·20	4·90	8·90	13·80	" .	28826	"
"	1·037	86·50	3·50	10·00	13·50	" .	28827	"
"	1·037	84·10	6·25	9·65	15·90	" .	28828	"
"	1·037	84·50	5·40	10·10	15·50	" .	28829	"
"	1·031	87.40	3·70	8·90	12·60	" .	28830	"
"		87·10	3·60	8·30	11·90	" .	28841	" Sp. gr. could not be taken.
....	1·030	88·50	2·70	8·80	11·50	C. J. Fagan	32102	Partly skimmed.
Sample No. 1.....	1·031	87·60	3·20	9·20	12·40	" . .	32103	Genuine ; below average in fat.
Vendors purchase milk from several parties and mix all together. This sample as sold to public.	1·030	87·75	3·10	9·15	12·25	"	32104	"
" ..	1·029	88·37	2·80	8·83	11·63	"	32105	Genuine ; below average in butter fat.
....	1·028	89·98	2·50	7·52	10·02	"	32106	Watered.
Vendor buys from several parties and mixes all together.	1·026	89·90	2 50	7·60	10·10	"	32107	"
.....	1·030	88·20	3·00	8·80	11·80	"	32108	Genuine ; under average in butter fat.
Sample No. 2. Vendor has several wagons, so I took two samples.	1·031	87·50	3·20	9·30	12·50	"	32109	Genuine ; below average in fat.
Vendor buys from several parties and mixes all together.	1·032	87·47	3·30	9·23	12·53	"	32110	"
This sample was taken from the can on its arrival at dairy.	1·030	88·68	2·40	8·92	11·32	"	32111	Partly skimmed.
" ..	1·031	88·00	3·00	9·00	12·00	"	32112	Genuine ; below average in fat.

RECORD OF FOOD SAMPLES—MILK—ANALYZED BY

Date of Collection.	Nature of Sample.	No. of sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher.
1907.			*District of British Columbia.—E. B. Parkinson, Inspector*—Concluded			
July 30	Milk.....	32113	Richmond Dairy Association, Pender St., Vancouver.	1 pint	5c.	J. A. McKinney, Steveston, B.C.
" 30	"	32114	" " ..	"		A. McRae, Eburne, B.C.
" 30	"	32115	" " ..	" ...		F. J. Engbaum, Steveston, B.C.
" 30	"	32116	" " .	"		J. McCulloch, Steveston, B.C.
" 31	"	32117	The Valley Dairy, Vancouver	"		Almond Creamery Co., Vancouver.
" 31	"	32118	W. Kirkby, 934 7th Ave., Mount Pleasant, Vancouver.	"		A. W. Wilson, Sea Island.
31	"	32119	A. Black, 627 Westminster Ave., Vancouver.	" 10...		Almond Dairy Co.....
" 31	"	32120	A. S. Cosgrove, Fairview, Vancouver	" 5....		Not known .....
" 31	"	32121	Garvin Bros., Westminster Ave., Vancouver.	" .. .		F. Wooster, Westminster Road, Vancouver
" 31	"	32122	A. O. Beath, 542 Cordova St. East, Vancouver.	" 10...		Jno. McMyne, Hammond, B.C.
31	"	32123	Almond Creamery Co., Vancouver...	" 5....		Not known .....
" 31	"	32124	" " Gore Ave., Vancouver.	"		A. Jones, Lulu Island.
Aug. 1.	"	32125	F. Thrussell, New Westminster, B.C.	"		Vendor .....
" 1.	"	32126	F. W. Smith, "	1 "	5c..	" .....
" 1.	"	32127	Brehaut & Booth, "	1 "	5c..	" .....
" 2.	"	32128	Baby's Own Dairy, Vancouver, B.C..	1 "	5c..	" .....
" 2.	"	32129	J. Anderton, 16th Ave., Fairview, Vancouver, B.C.	1 "	5c..	J. McLean, Eburne, B. C.
" 2.	"	32130	Cherry Dairy, 2501 Bridge St , Vancouver, B.C.	1 "	5c..	Steeves, No. 9 Road, Eburne, B.C.
" 2.	"	32131	Wells & Co., Pender St., Vancouver, B.C.	1 "	5c..	Richmond Dairy Association, Pender St., Vancouver, B.C.

SESSIONAL PAPER No. 14

INLAND REVENUE DEPARTMENT LABORATORY—*Concluded.*

Inspector's Report.	Results of Analysis.					Name of Analyst.	No. of Sample.	Remarks.
	Specific Gravity at 15° C.	Water.	Butter Fat.	Other Solids.	Total Solids.			
	p. c.	p. c.	p. c.	p. c.	p. c.			
This sample was taken from the can on its arrival at diary.	1·030	88·70	2·40	8·90	11·30	C. J. Fagan	32113	Partly skimmed.
" .	1·030	88·20	3·30	8·50	11·80	"	32114	Genuine ; under average in total solids.
" ..	1·030	88·10	3·08	8·82	11·90	"	32115	Genuine ; low in butter fat.
" ..	1·030	88·00	3·20	8·80	12·00	"	32116	Genuine ; below average in fat.
.....	1·027	89·75	2·40	7·85	10·25	"	32117	Watered.
.. ..	1·029	88·00	3·30	8·70	12·00	"	32118	Genuine ; below average in fat.
....	1·024	93·70	1·50	4·80	6·30	"	32119	Watered.
Vendor purchases from several parties and mixes all together.	1·029	88·00	3·00	9·00	12·00	"	32120	Genuine ; below average in fat.
... .	1·028	89·40	2·33	8·27	10·60	.....	32121	Partly skimmed.
....	1·029	88·85	2·60	8·55	11·15	.....	32122	"
Vendor purchases from several parties and mixes all together.	1·026	90·20	1·80	8·00	9·80	.....	32123	Skimmed.
This sample taken from can on its arrival at dairy.	1·030	87·83	3·20	8·97	12·17	C. J. Fagan ...	32124	Genuine ; below average in fat.
.....	1·030	88·90	2·50	8·60	11·10	C. J. Fagan	32125	Partly skimmed.
....	1·029	88·70	2·55	8.75	11·30	"	32126	"
.....	1·030	86.85	3·70	9·45	13·15	"	32127	Genuine.
....	1.031	88·28	2·60	9·12	11·72	"	32128	Partly skimmed.
....	1·030	86·75	3 50	9·75	13·25	"	32129	Genuine.
.....	1·029	88·00	3·20	8·80	12·00	" ...	32130	Genuine ; below average in fat.
....	1·020	92·07	2·20	5 73	7·93	"	32131	Watered.

APPENDIX TO BULLETIN 142.

BY-LAWS TO LICENSE AND REGULATE MILK VENDORS IN THE FOLLOWING CITIES:

Halifax—No regulations so far.

Fredericton—No regulations so far.

Charlottetown—An inspector is appointed; inspection of milk as delivered; license fee of $15 a year; penalties, $30 or 30 days jail.

St. John, N.B.—Inspection of herds; inspection of premises; inspector appointed; inspection of milk as delivered; vendor shall notify of any disease in family or herd; penalties $40 and license cancelled. Shall deliver statement of name and address, source or sources of milk supply, number of cows in his possession, quantity of milk disposed of, situation of dairies. Shall not offer skimmed milk unless asked for, and labelled with letters of not less than 2 inches long. Shall furnish certificate from Veterinary Surgeon that cows are free from disease, at least once a year.

Quebec—Has about the same regulations as St. John; but the license fee is only $1 per annum; and there is a standard for fat of 3 per cent., 12 per cent. total solids and sp. gr. of 1.029 to 1.033 at 60° F. Penalties are $20.

Montreal—Same as Quebec, but no specification for the sale of skimmed milk.

Hull—Same as above, but the standard for butter-fat is 3·25 and penalties from $1 to $50.

Ottawa—Same as Quebec, but 3·5 butter fat.

Kingston—3 per cent. butter fat and 12 total solids; penalty, $1 to $50, otherwise the same as Ottawa.

Toronto—3 per cent. butter fat and 12 per cent. total solids; inspector appointed and inspection of milk as delivered.

Brantford—3·5 butter fat and 12 total solids, and same as Toronto.

Hamilton—No standards, but has an inspector appointed for herds, premises, and milk as delivered, and a license fee of $1 per annum.

Winnipeg—By-laws are in the hands of the printer.

Calgary—3 per cent. butter fat, and same as Hamilton.

Vancouver—Same as St. John, N.B.; 3 per cent. butter fat and a license fee of $5 per annum and penalties from $1 to $100.

Regina—Has about the same regulations as St. John; the license fee is $5 per annum; and there is a standard of 3.5 per cent for butter fat and 12 per cent. Total solids. Penalties are $10 a day for each day after having been notified by the Health officer.

APPENDIX I.

BULLETIN No. 143—DRUGS

CHLORAL HYDRATE, AMMONIUM BROMIDE, PURIFIED CREAM OF TARTAR

OTTAWA, December 3, 1907.

W. J. GERALD, Esq.,

Deputy Minister of Inland Revenue.

SIR,—I beg to hand you a report dealing with 389 samples collected as drugs, and more particularly described as follows:—

	Samples.
Chloral hydrate	129
Ammonium bromide	129
Boracic acid (sold as ammonium bromide)	1
Potassii tartras acidus	92
Rochelle salt (sold as pot. tart. ac.)	1
Cream of tartar	36
Bi. carbonate of soda (sold as cream of tartar)	1
Total	389

The collections were made in July and August last, and particular instructions were issued to guide the inspectors in their work. Unfortunately these instructions were ignored by four of the inspectors, and, in consequence of this fact, thirty-seven samples of cream of tartar were purchased under that name, a name which is not recognized by the British Pharmocopœia. Cream of tartar is not a drug, although *purified cream of tartar* is an official synonym for potassii tartras acidus. These samples must, therefore, in justice to the vendors, be judged as commercial cream of tartar, and not in terms of the pharmacopœal definition for the purified article.

Descriptive notes precede the tables, and the only other point which deserves mention here is the occurrence of serious blunders in dispensing. When one is served with boracic acid for bromide of ammonium, Rochelle salt for purified cream of tartar, and bicarbonate of soda for cream of tartar, it is apparent that grave consequences are liable to follow in the filling of medical prescriptions. It will be further noted that one of the samples of bromide of ammonium contains nearly 18 per cent. of ammonio-chloride of mercury.

I think that everything further of importance in regard to these articles will be found in the notes appended to the tables. I have considered it unnecessary to give details of collection in regard to samples of chloral hydrate, since all of these samples were officially pure.

I beg to recommend that this report be published as Bulletin 143.

I have the honour to be, Sir,
Your obedient servant,

A. McGILL,
Chief Analyst.

CHLORAL HYDRATE.

In July and August a collection of ten samples of this drug in each Inspectoral district was ordered. One hundred and twenty nine (129) samples were collected.

These were examined by Mr. Lemoine, of this office, and were found in every instance, to come up the requirements of the British Pharmacopœia. As regards the Soda test, a remarkable homogeneity was found, the volume of normal soda corresponding to 4 grammes of the drug, varying between 29·5cc and 29·9cc. In no case was any trace of chloral alcoholate found ; and eighty samples were quite free from chlorides, while the traces obtained in the remaining 49 samples were so small as to be negligible.

The examination shows that this important drug, as supplied in Canada, is of a uniformly high grade.

AMMONIUM BROMIDE—(See Table I).

One hundred and thirty samples were collected in August of this year ; being ten in each inspectoral district.

Of these samples, two, namely Nos. 33424 and 29569 are not ammonium bromide. The former contains about 18 per cent of ammoniated chloride of mercury. No. 29569 is boracic acid.

The remaining samples (128 in number) are true to name ; but of very different degrees of purity.

The distinctive pharmacopoeal test for the purity of this drug is, titration with volumetric solution of nitrate of silver. The reaction is as follows :—

$$\begin{array}{cccccc} NH_4Br & + & AgNO_3 & = & AgBr & + & NH_4NO_3 \\ 98 & & 170 & & 188 & & 80 \\ 1 & & 1{\cdot}7347 & = & 102{\cdot}2 & cc & \frac{N}{10} \end{array}$$

Hence *one gramme* of chemically pure ammonium bromide should require 102·2 cubic centimetres of the deci-normal solution of silver nitrate for complete decomposition. The closely allied chloride and iodide of ammonium (or other base) react similarly with silver solution. Owing to the lower molecular weight of the chloride, it would require $\cdot\frac{1}{0\,0\,5\,3\,5} = 186{\cdot}9$ cubic centimetres of deci-normal solution to react with 1 gramme ; while, the greater molecular weight of iodide would cause only $\cdot\frac{1}{0\,1\,4\,5} = 69{\cdot}0$ cubic centimetres to be used, in the case of the ammonium salts.

It is unlikely that the iodide should be present, as an impurity, on account of its higher value, and for other reasons. As a matter of fact, none of the samples now reported shows a lower titre than 102, except No. 33424, which contains ammoniochloride of mercury, insoluble in water, and consequently not entering into reaction with the silver test.

The pharmacopoeia provides for traces of chloride as an impurity, and permits samples requiring as high as 103·6 cubic centimetres of the test solution to pass as satisfactory.

Assuming excess of test solution (above 102·2 cc) as due to admixture of ammonium chloride, the percentage of this substance present may be calculated from the following :—

If x = percentage ammonium chloride
100 − x = " " bromide
Let a = cc. volumetric solution used per gramme sample

$$\frac{x}{\cdot 535} + \frac{100-x}{\cdot 98} = a$$

Whence, x = 1·1782a − 120·23

Taking a = 103·6, it thus appears that the British Pharmacopoeia permits as much as 1·83 per cent of ammonium chloride.

It will be seen, by consulting the appended table, that while a large number of the samples examined come very near to the B. P. Standard, not one sample quite reaches it, and a considerable number depart from it by notable amounts.

Chloride of ammonium is not a dangerous impurity, except in so far as it materially reduces the medicinal efficiency of the drug. The bromide is recognized as essentially a nerve sedative and depressant; while the chloride is a nerve stimulant. It is therefore evident that these substances tend to counteract each other. Moreover, the effective dose of chloride is smaller than that of the bromide; hence, the presence of relatively small percentages of the chloride is highly objectionable.

Since this is the first occasion upon which this drug has been subjected to inspection, it may be well to summarize the results of its examination, as below:—

PERCENTAGE OF PURITY.

District.	97 p.c.	96 p.c.	95 p.c.	94 p.c.	93 p.c.	92 p.c.	91 p.c.	90 p.c.	Total.
									Samples
Nova Scotia	5	2	1			1			9
Prince Edward Island	3	7							10
New Brunswick	2	1	1	1		2	1	1	9
Quebec	1	3	1	2		2	1		10
St. Hyacinthe	4	3	2				1		10
Montreal	3	6	1						10
Ottawa	3	7							10
Kingston	2	7				1			10
Toronto	2	5	1			1		1	10
London	2	6	1			1			10
Manitoba	3	3				2	2		10
Calgary	7	2	1						10
British Columbia	–	3	1			3	2	1	10
	37	55	10	3	0	13	7	3	128

This tabulation omits the two cases referred to above, where decided mistakes in dispensing occurred; in one case boracic acid being furnished; and in the other a bromide of ammonium highly contaminated with ammonio-chloride of mercury.

Expressed as percentages, we have the following:—

BROMIDE OF AMMONIUM.

	Per cent.
Of 97 to 98 per cent purity	28·9
96 " 97 " "	43·0
95 " 96 " "	7·8
94 " 95 " "	2·3
93 " 94 " "	
92 " 93 " "	10·1
91 " 92 " "	5·6
90 " 91 " "	2·3
	100·0 per cent

of the collection.

Even if we allow a margin of 1 to 2 per cent. to cover possible errors in sampling, weighing, measuring and titration (a margin which is fully large even when work is not done in duplicate, and which entirely disappears under the conditions fulfilled in this laboratory), we find more than 20 per cent. of these samples below such standard, i. e., below 95 per cent. of purity.

This being a first inspection of the drug, it might be advisable to permit all samples reaching a purity of 95 per cent. to pass unquestioned. This suggestion is offered without prejudice to future inspection.

PURIFIED CREAM OF TARTAR.

Potassii Tartras Acidus: Acid potassium tartrate; Bitartrate of potassium, or purified cream of tartar, is to be carefully distinguished from commercial cream of tartar. For this last substance no legalized standard of purity exists, while for the first-named substance the British Pharmacopœia furnishes a perfectly definite standard "Each gramme of the dry salt should require for neutralization at least 5·2 cubic centimetres of the *volumetric solution of sodium hydroxide.* It should yield no characteristic reaction with the tests for lead, copper or iron, and only the slightest reaction with tests for calcium, magnesium, sodium, chlorides or sulphates. The total amount of impurities should not exceed 2½ per cent. of the dried salt."

Commercial cream of tartar, for which no standard of purity has been, thus far made legal, is very largely used as a component of baking powders, of effervescing drinks, etc. It is found on the market in varying degrees of purity, and has been made the subject of inspection in 1887, 1889, 1896, 1900 and 1905. The following synopsis may be of interest:—

COMMERCIAL CREAM OF TARTAR.

Date of collection.	Number of samples examined.	Found genuine.	Same expressed as percentage.
1887[1]	36	22	61
1889	86	52	60
1896	99	65	66
1900	65	57	88
1905	180	132	73

It is likewise of interest to note the *degree of purity* reached by the Cream of Tartar of commerce. For the inspection of 1887, 73 per cent of the genuine cream of tartars examined were below 90 per cent purity; for 1889, 60 per cent; for 1896, 30 per cent; for 1900, 63 per cent. As regards the inspection of 1905, 12·8 per cent of the genuine samples reached a purity of 97 per cent, *i.e.* were practically up to the pharmacopoeal standard of purity; while 38·3 per cent were above 90 per cent of purity.

It must be remembered that these statements refer to Commercial Cream of Tartar. The inspection now reported has regard to the pharmacopoeal *Bitartrate of Potassium*, for which a standard of 97½ per cent purity is required. Our inspectors were instructed to ask for the article by one or other of the names recognized by the British Pharmacopoeia. These names are (1) Potassii Tartras Acidus; (2) Bi-tartrate of Potassium; (3) Acid potassium tartrate; (4) Purified Cream of Tartar.

These instructions were disregarded by the inspectors for the Districts of London, St. Hyacinthe, Manitoba and Calgary, whose invoices show that *Cream of Tartar* has been asked for. This failure to observe my instructions has the important consequence that thirty seven (37) samples, of the present collection, must be judged as *Cream of Tartar* and not as *Purified Cream of Tartar.*

Of the 37 samples referred to, No. 28837 contains a small amount of bi-carbonate of soda. It is probable that this is unintentionally present (perhaps from the container having formerly contained bi-carbonate) and I have marked it as "doubtful." No. 25621 consists entirely of Bi-carbonate of soda, and is evidently an error in dispensing. No. 27878 consists of acid phosphate of lime and starch; and No. 30428, contains burnt alum and starch. These two samples are therefore adulterated, under the Act. The

remaining 33 samples must be passed as legal cream of tartar although their values, to the consumer, vary greatly. This is shown in the following table :—

	Samples.
95 to 100 per cent purity	11
90 to 95 " "	14
85 to 90 " "	7
Below 85 " "	1
	33
Doubtful	1
Adulterated	2
Error in dispensing	1
Total	37

The samples just referred to are reported in detail in the accompanying Table No. III.

Table No. II. contains details of the examination of ninety three (93) samples purchased as *Potassii Tartras Acidus*, or Purified Cream of Tartar.

Of these samples Nos. 33415, 26309 and 33314 consist of burnt alum and starch, and are clearly adulterated. In the case of No. 26309 the word "Commercial" is pencilled on the label. Even as a commercial *Cream of Tartar* it would be pronounced adulterated. No. 32554 is a sample of Rochelle salt, and is clearly an error in dispensing.

Of the remaining 89 samples, only 21 samples fulfil the requirements of the British Pharmacopœia. The 68 samples which, although genuine, in the sense of being essentially Bi-tartrate of potassium, are below the standard of purity fixed by the pharmacopœia, differ so widely among themselves, that it seems scarcely just to place them in a single category. The variations referred to are clearly brought out, thus : —

	Samples.
From 97·5 to 95 per cent purity	4
" 95 to 92·5 "	6
" 92·5 to 90 "	24
Below 90 per cent	34
Total	68

The results of this examination of *Purified Cream of Tartar*, may therefore be summarized as follows :—

	Samples.
Genuine	21
Doubtful (Error in dispensing)	1
Adulterated (Burnt alum, &c.)	3
" (Commercial Cream of Tartar, below 90 p.c. purity)	34
" (Commercial Cream of Tartar, below B.P. standard, but from 90 to 95 p.c. purity)	30
" (Commercial Cream of Tartar, below B.P. standard, but above 95 p.c. of purity)	4
Total	93

While I have no power to change this classification, or to characterize as other than adulterated, any sample falling below 97·5 per cent purity, I would recommend a lenient treatment of such offenders, whose samples show a reasonably close approximation to the standard fixed by the British Pharmacopoeia ; particularly, as the failure to meet the high degree of purity required by the Pharmacopoeia, involves no serious reduction of value in the drug, so far as the cases in question are concerned.

A. McGILL.

TABLE I.—RECORD OF SAMPLES OF BROMIDE OF AMMONIA ANALYZED

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.
1907.			DISTRICT OF NOVA SCOTIA—		
Aug. 5..	Bromide of Ammonia....	33416	E. S. Blackie, Hollis St., Halifax, N.S.....	3 ozs...	25
" 5..	"	33417	National Drug Co	3 " ...	20
" 6..	"	33418	G. A. Burbidge, Hollis St., Halifax, N.S.....	3 " ...	20
" 6..	"	33419	Jno. R. Rawley, Granville St., Halifax, N.S...	3 " ...	20
" 6..	"	33420	Brown Bros. & Co., Granville St., Halifax, N.S.	3 " ...	20
" 6..	"	33421	C. E. Huggins, Jacob St., Halifax, N.S.....	3 " ...	15
" 7..	"	33422	H. W. Cameron, Brunswick St., Halifax, N.S..	3 " ...	15
" 7..	"	33423	Jas. McFatridge, Gottingen St., Halifax, N.S..	3 " ...	30
" 7..	"	33424	Coombes & Co., Gottingen St., Halifax, N.S. ..	3 " ...	25
" 13..	"	33425	R. F. Guest, Yarmouth, N.S.....	3 " ...	20
			DISTRICT OF PRINCE EDWARD		
July 25..	Bromide of Ammonia....	31140	Reddin Bros., Charlottetown, P.E.I.	3 " ...	30
" 25..	"	31141	J. G. Jameson, Charlottetown, P.E.I.	3 " ...	30
" 25..	"	31142	G. S. Hughes, Charlottetown, P.E.I.....	3 " ...	20
" 26..	"	31143	A. Reddin, Charlottetown, P.E.I.....	3 " ...	25
" 26..	"	31144	McDonald & McKinnon, Charlottetown, P.E.I.	3 " ...	30
" 31..	"	31145	J. W. Caruthers, Montague Bridge, P.E.I... ..	3 " ...	20
Aug. 6..	"	31146	P. McNutt & Son, Malpeque, P.E.I.....	3 " ...	15
" 6..	"	31147	Jardine & Bernard, Kensington, P.E.I.....	3 " ...	30
" 7..	"	31148	W. Kennedy, Summerside, P.E.I.....	3 " ...	30
" 7..	"	31149	A. W. P. Gourlie, Summerside, P.E.I	3 " ...	30
			DISTRICT OF NEW BRUNSWICK—		
July 26..	Bromide of Ammonia...	29564	Nat. Drug & Chem. Co. Ltd., Mill st., St. John, N.B.	3 ozs...	25
" 27..	"	29565	Geo. A. Moore, 105 Brussells st., St. John, N.B.	3 " ...	45
" 29..	" ...	29566	Can. Drug Co. Ltd., Prince William St., St. John, N. B.	3 " ...	45
" 30..	" ...	29567	P. J. Donohoe, Cor. St. James and Charlotte St., St. John, N.B.	3 " ...	45
Aug. 6..	"	29568	B. J. Sharp, Broad St., Sussex, Kings Co., N.B.	3 " ...	45
" 7..	"	29569	Dr. E. O. Steeves Pharmacy, Main St. Moncton N.B.	3 " ...	45
" 9..	"	29570	C. P. Hickey, Main St., Chatham, N.B.....	3 " . .	35
" 20..	"	29571	Estate of Fred Waterson, King St., St. Stephen, N.B.	3 " ...	45
" 21..	"	29572	Alonzo Staples, Cor. of York and King St., Fredricton, N.B.	3 " ...	30
" 23..	"	29573	Sheasgreen Drug Co., Main St., Woodstock, N.B.	3 " ...	25

SESSIONAL PAPER No. 14

BY INLAND REVENUE DEPARTMENT—Public Analyst Laboratory.

Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Results of Analysis.			Opinion of the Chief Analyst.
		B. P. Silver test $\frac{N}{10}$ per gram.	Excess over 102 cc. $\frac{N}{10}$ calculated to chloride.	Percentage of Purity.	
R. J. WAUGH, INSPECTOR.					
National Drug Co., Halifax, N.S.	Sold as labeled.	105	3·52	96·48	
Not known	"	104	2·35	97·65	
National Drug Co., Halifax, N.S.	"	104	2·35	97·65	
" "	"	105	3·52	96·48	
" "	"	104	2·35	97·65	
" "	"	106	4·70	95·30	
Fielding Chemical Co., Guelph, O.	"	108	7·04	92·96	
National Drug Co., Halifax, N.S.	"	104	2·35	97·65	
" "	"	84	....	.....	This sample contains about 18 p.c. of ammonio-chloride of mercury.
National Drug Co., St. John, N.B. Branch.	"	104	2·35	97·65	
ISLAND—T. MOORE, INSPECTOR.					
Lyman Sons, Montreal	.....	105	3·52	96·48	
Not known	.....	104	2·35	97·65	
"	.....	104	2·35	97·65	
National Drug Co., Montreal	.....	104	2·35	97·65	
Lyman & Sons, Montreal	.....	105	3·52	96·48	
Simpson Bros., Halifax	.....	105	3·52	96·48	
National Drug Co., Montreal	.....	105	3·52	96·48	
Lyman Sons & Co., Montreal	.....	105	3·52	96·48	
Not known	.....	105	3·52	96·48	
National Drug Co., Montreal	.....	105	3·52	96·48	
J. C. FERGUSON, INSPECTOR.					
Imported by Vendors	Sold from bulk.	108	7·04	92·96	
Nat. Drug & Chem. Co., St. John, N.B.	"	104	2·35	97·65	
Malinkrot Chem. Co., New York, U.S.A.	"	106	4·70	95·30	
Nat. Drug Co., Ltd., St. John, N.B.	"	108	7·04	92·96	
Nat. Drug Co., Ltd., St. John, N.B.	....	107	5·87	94·13	
Not known	Samples filled from stock bottle on shelf.	.....	.....	.....	This is a sample of Boracic Acid.
Rosengarten & Son, Philadelphia.	Taken from original package.	109	8·21	91·79	
Powers & Weightman, Philadelphia, P. A.	Sample filled from original package.	104	2·35	97·65	
Can. Drug Co., St. John, N.B.	Sample filled from large package.	105	3·52	96·48	
Can. Drug Co., St. John, N.B.	.....	110	9·4	90·60	

TABLE I.—RECORD OF SAMPLES OF BROMIDE OF AMMONIA ANALYZED

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.
1907.					
			DISTRICT OF QUEBEC—		
July 29..	Bromide of Ammonia...	26304	Joseph Masson, 808 St. Valier	3 ozs...	36
" 29..	"	26305	Thon. I. Laroche, 735 St. Valier	3 " ...	25
" 29..	"	26306	L. E. Martel, 91 St. Joseph	3 " ...	36
" 29..	"	26307	David Gagnon, 30 St. Pierre	3 " ...	36
" 29..	"	26308	Victor Giroux, 104 Coté Lamontagne	3 " ...	30
" 29..	"	26329	W. Brunnette et Cie, 139 St. Joseph	3 " ...	30
" 29..	"	26310	C. P. Delisle, 379½ St. Jean	3 " ...	30
" 29..	" ...	26311	Alfred Jolicoeur, 338 St. Jean	3 " ...	40
" 29..	"	26312	F. E. Gauvreau, 336 St. Jean	3 " ...	30
" 29..	"	26313	T. Edmond Dube	3 " ...	21
			DISTRICT OF ST. HYACINTHE—		
Aug. 6..	Bromide of Ammonia....	27851	J. C. Stockwell, Danville, Que	9 ozs...	1 00
" 9..	"	27852	A. Baldwin, Coaticook, Que	9 " ...	75
" 9..	"	27853	W. H. Griffith, Sherbrooke, Que	9 " ...	65
" 9..	"	27854	F. T. Ansell, Que	9 " ...	45
" 14..	"	27855	Wright & Co., St. Jean, Que	9 " ...	75
" 14..	"	27856	P. P. Sabourin, Que	9 " ...	55
" 16..	"	27857	Dr. C. P. Verdon, Granby, Que	9 " ...	75
" 26..	"	27858	Dr. St. Jacques & Cie, St. Hyacinthe, Que	9 " ...	50
" 26..	"	27859	Dr. John West, Magog, Que	9 " ...	1 00
" 26..	"	27860	Pharmacie Ostigny, St. Hyacinthe, Que	9 " ...	60
			DISTRICT OF MONTREAL—		
July 30..	Bromide of Ammonia....	32543	J. E. W. Lecours, 238 Craig St., Montreal	3 ozs...	30
" 30..	"	32544	Henry Lanctot, 295 St. Catherine St. E., M'ntl.	3 " ...	25
Aug. 8..	"	32545	Dr. J. Leduc & Co., Notre Dame St., Montreal.	3 " ...	20
" 8..	"	32546	Pharmacie Robert, 1 St. Lawrence St., Montreal	3 " ...	25
" 9..	"	32547	James Fortune, Huntingdon	3 " ...	30
" 12..	"	32548	J. A. Harte, Montreal	3 " ...	30
" 14..	"	32549	A. L. Boucher, Joliette	3 " ...	45
" 14..	"	32550	J. J. Lyons Co., Montreal	3 " ...	30
" 14..	"	32551	J. Pigeon	3 " ...	30
" 12.	"	32562	O. F. Pinck, Montreal	3 " ...	25
			DISTRICT OF OTTAWA—		
July 30..	Bromide of Ammonia....	34001	Medical Hall, Hull	3 ozs...	25
" 30..	"	34002	Modern Drug Store, Hull	3 " ...	25
" 29..	"	34003	E. R. DesRosiers, Ottawa	3 " ...	30
" 29..	"	34004	The Jos. Valiquette Co., Ottawa	3 " ...	15
" 30..	"	34005	Beattie & Argue, Ottawa	3 " ...	25
" 30..	"	34006	Allen & Cochrane, Ottawa.	3 " ...	30
" 30..	"	34007	Geo. Watson, Ottawa	3 " ...	30
Aug. 5..	"	34008	Geo. E. Moore, Carleton Place	3 " ...	25
" 6..	"	34009	Wm. Johnston, Smith's Falls	3 " ...	30
" 7..	"	34010	F. L. Hall, Perth	3 " ...	20

BY INLAND REVENUE DEPARTMENT—PUBLIC ANALYST LABORATORY.

Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Results of Analysis. B. P. Silver test $\frac{N}{10}$ per gram.	Excess over 102 cc. $\frac{N}{10}$ calculated to chloride.	Percentage of Purity.	Opinion of the Chief Analyst.
E. BELAND, INSPECTOR.					
T. E. Martel, 91 St. Joseph		107	5·87	94·13	
Kerry Watson, Montreal		107	5·87	94·13	
The Lyman Knox Co., Montreal		105	3·52	96·48	
" " "		106	4·70	95·30	
" " "		108	7·04	92·96	
Not known		104	2·35	97·65	
"		109	8·21	91·79	
"		105	3·52	96·48	
Lyman Sons & Co., Montreal		108	7·04	92·96	
Fielding Chem. Co		105	3·52	96·48	
J. C. ROULEAU, INSPECTOR.					
Not known		106	4·70	95·30	
"		105	3·52	96·48	
Lyman Sons & Co., Montreal		104	2·35	97·65	
Kerry Watson & Co., Montreal		105	3·52	96·48	
Lyman Sons & Co., Montreal		105	3·52	96·48	
N. C. Polson & Co., Kingston		104	2·35	97·65	
Not known		104	2·35	97·65	
"		109	8·21	91·79	
Lyman Sons & Co., Montreal		104	2·35	97·65	
Not known		106	4·70	95·30	
J. J. COSTIGAN, INSPECTOR.					
Not known		105	3·52	96·48	
"		104	2·35	97·65	
		105	3·52	96·48	
		105	3·52	96·48	
		105	3·52	96·48	
		105	3·52	96·48	
		105	3·52	96·48	
		104	2·35	97·65	
		106	4·70	95·30	
National Drug and Chemical Co.		104	2·35	97·65	
J. A. RICKEY, INSPECTOR.					
National Drug and Chemical Co.	Taken from bottle on shelf.	104	2·35	97·65	
Lyman, Knox & Co	"	105	3·52	96·48	
Ottawa Drug Co	"	105	3·52	96·48	
Lyman Sons & Co	"	104	2·35	97·65	
National Drug and Chemical Co.	"	105	3·52	96·48	
Lyman Sons & Co	"	105	3·52	96·48	
"	"	105	3·52	96·48	
National Drug and Chemical Co.	"	105	3·52	96·48	
" "	"	104	2·35	97·65	
" "	"	105	3·52	96·48	

TABLE I.—RECORD OF SAMPLES OF BROMIDE OF AMMONIA ANALYZED

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.
1907.			DISTRICT OF KINGSTON—		
July 23..	Bromide of Ammonia....	32447	W. W. Gibson, Kingston	3 ozs...	30
" 23..	"	32448	H. Wade, Kingston	3 " ...	30
" 23..	"	32449	L. P. Best, Kingston	3 " ...	45
" 23..	"	32450	H. Skinner & Co., Kingston	3 " ...	30
" 23..	"	32451	G. Mahood, Kingston	3 " ...	30
" 23..	"	32452	W. H. Medley, Kingston	3 " ...	30
" 23..	"	32453	F. J. Hoag, Kingston	3 " ...	30
" 23..	"	32454	A. J. Chown, Kingston	3 " ...	30
" 24..	"	32455	J. B. McLead, Kingston	3 " ...	30
" 26..	"	32456	F. C. Clarke, Belleville Front	3 " ...	25
			DISTRICT OF TORONTO		
Aug. 9..	Bromide of Ammonia....	33341	Chas J. Stoddart, 95 Dundas St., West Toronto Junction.	3 ozs...	25
" 12..	"	33342	Parke & Parke, 18 Market Square, Hamilton	3 " ...	25
" 15..	"	33343	S. B. Scobell, 13 St. James St., St. Catharines	3 " ...	15
" 15..	"	33344	Henry Southcott, 99 St. Paul St., St. Catharines	3 " ...	25
" 15..	"	33345	Walker & Abbs, 30 Queen St., St. Catharines	3 " ...	25
" 15..	"	33346	A. J. Greenwood, 149 St. Paul St., St. Catharines	3 " ...	15
" 15..	"	33347	F. W. Jeffs, 68 King St., St. Catharines	3 " ...	20
" 19..	"	33348	J. L. Macartney, 34 Erie Ave., Niagara Falls	3 " ...	15
" 19..	"	33349	Niagara Falls Drug Co., 37 Queen St., Niagara Falls.	3 " ...	25
" 19..	"	33350	A. C. Thorburne, Niagara Falls South	3 " ...	25
			DISTRICT OF LONDON—		
July 29..	Bromide of Ammonia...	30390	Frank H. Smith, St. Mary's	6 ozs...	60
Aug. 3..	"	30411	E. D. Vignon, Windsor	3 " ...	30
" 13.	"	30416	Geo. H. Small, St. Thomas.	6 " ...	60
" 13..	"	30419	Callard & McLacklan, London	6 " ...	60
" 14..	"	30424	W. A. Karn, Woodstock	3 " ...	30
" 15..	" ...	30427	Fred C. Bond, Galt	3 " ...	30
" 15..	"	30429	C. J. Dickinson, Galt	3 " ...	30
" 15..	"	30431	John Schmith, Berlin	3 " ...	30
" 16..	"	30435	Walter Beattie Co., Guelph	3 " ...	30
" 16..	"	30437	Alexander Steevans, Guelph	3 " ...	45

SESSIONAL PAPER No. 14

BY INLAND REVENUE DEPARTMENT—Public Analyst Laboratory.

Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Results of Analysis.			Opinion of the Chief Analyst.
		B. P. Silver test $\frac{N}{10}$ per gram.	Excess over 102 cc. $\frac{N}{10}$ calculated to chloride.	Percentage of Purity.	
J. HOGAN, INSPECTOR.					
H. Skinner & Co., Kingston		105	3·52	96·48	
" "		105	3·52	96·48	
Evans & Sons, Montreal		105	3·52	96·48	
H. Skinner & Co., Kingston		105	3·52	96·48	
McKesson & Robbins, New York		105	3·52	96·48	
Not known		104	2·35	97·65	
H. Skinner & Co., Kingston		104	2·35	97·65	
" "		105	3·52	96·48	
" "		105	3·52	96·48	
Evans & Sons, Montreal		108	7·04	92·96	
H. J. DAGER, INSPECTOR.					
Lyman Knox, Toronto		105	3·52	96·48	
Howard, London, Eng		105	3·52	96·48	
N. C. Polson, Kingston		104	2·35	97·65	
Lyman Bros., Toronto		105	3·52	96·48	
Mallinckrodt, New York City		110	9·40	90·60	
Lyman Bros., Toronto		105	3·52	96·48	
Not known		108	7·04	92·96	
Dom. Drug Co., Hamilton		104	2·35	97·65	
" "		106	4·70	95·30	
Dom Drug Co., Hamilton		105	3·52	96·48	
T. KIDD, INSPECTOR.					
Nat. Drug & Chem. Co., London, Ont.		105	3·52	96·48	
Nat. Drug & Chem. Co., London, Ont.		105	3·52	96·48	
Nat. Drug & Chem. Co., London, Ont.		105	3·52	96·48	
Wm. Sanders, London		105	3·52	96·48	
Lyman Bros. & Co., Toronto		108	7·04	92·96	
" "		105	3·52	96·48	
Elliott & Co., Toronto		105	3·52	96·48	
Not known		104	2·35	97·65	
J. Winer & Co., Guelph & Hamilton.		105	3·52	96·48	
Lyman Bros., Toronto		106	4·70	95·30	

TABLE I.—RECORD OF SAMPLES OF BROMIDE OF AMMONIA ANALYZED

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.
1907.			DISTRICT OF MANITOBA—		
Aug. 6..	Bromide of Ammonia...	25613	Cranstons Drug Store, Winnipeg	3 ozs..	25
" 6..	"	25616	H. W. Bradshaw, Winnipeg	3 " ..	20
" 6..	"	25619	Colcleugh's Drug Store, Winnipeg	3 " ..	45
" 7..	"	25622	W. F. C. Brathwaite, Winnipeg	3 " ..	25
" 7..	"	25625	Gordon Mitchell Co., Winnipeg	3 " ..	35
" 7..	"	25635	H. Wise Co., Winnipeg	3 " ..	15
" 7 .	"	25638	The T. Eaton Co., Winnipeg	3 " ..	45
" 6..	"	25641	Winnipeg Drug Hall, Winnipeg	3 " .	40
" 10..	"	25650	R. D. Bruce	3 " ..	25
" 10..	"	25653	Thornton Andrews, Winnipeg	3 " ..	30
			DISTRICT OF CALGARY—		
Aug. 21..	Bromide of Ammonia...	28788	Findlay Drug Co., Calgary	3 ozs...	30
" 21..	"	28789	Owen Bott, Calgary.	3 " ..	30
" 23..	"	28790	McCutcheon Bros., Calgary	3 " ..	30
" 17..	" ..	28781	C. S. Pringle, Medicine Hat	3 " ..	30
" 17..	"	28782	B. F. Souch, Medicine Hat	3 " ..	45
" 17..	"	28783	E. M. Cawker, Medicine Hat	3 " ..	50
" 21..	"	28784	C. A. Wallace, Calgary	3 " ..	30
" 21..	"	28785	M. Maclean, Calgary	3 " ..	30
" 21..	"	28786	Oliver Bros., Calgary	3 " ..	30
" 21..	"	28787	Curry & Cope, Calgary	3 " ..	30
			DISTRICT OF BRITISH COLUMBIA—		
Aug. 1 .	Bromide of Ammonia...	32132	T. A. Muir & Co., New Westminster, B.C.	3 ozs...	35
" 1..	"	32133	D. S. Curtis & Co., New Westminster, B. C.	3 " .	50
" 9..	"	32134	The Nelson Drug Stores Ltd., Vancouver, B.C.	3 " ..	45
" 9..	"	32135	John Reed, Granville St., Vancouver, B.C.	3 " ..	50
" 9..	" ...	32136	The McDowell, Atkins, Watson Co. Ltd., Vancouver.	3 " ..	45
" 9..	"	32137	W. M. Harrison & Co., Granville St., Vancouver.	3 " ..	35
" 9..	"	32138	The Woodward Dept. Stores, Hasting St., Vancouver.	3 " ..	25
" 9..	"	32139	The Red Cross Pharmacy, Cordova St. Vancouver.	3 " ..	40
" 16..	"	32140	F. J. Mackenzie, Ladner, B.C.	3 " ..	25
" 19..	" .. .	32141	E. S. Knowlton Drug Stores, Carrall St. Vancouver.	3 " ..	45

SESSIONAL PAPER No. 14

BY INLAND REVENUE DEPARTMENT—Public Analyst Laboratory.

Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Results of Analysis.			Opinion of the Chief Analyst.
		B. P. Silver test $\frac{N}{10}$ per gram.	Excess over 102 cc. N calculated to $\frac{N}{10}$ chloride.	Percentage of Purity.	
A. C. LARIVIÈRE, INSPECTOR.					
		p. c.			
Martin Bole, Wynne Co., Winnipeg.		105	3·52	96·48	
The Bole Drug Co., Winnipeg		109	8·21	91·79	
Not known		108	7·04	92·96	
The Bole Drug Co., Winnipeg		104	2·35	97·65	
Not known		109	8·21	91·79	
"		108	7·04	92·96	
"		105	3·52	96·48	
Martin Bole, Wynne Co., Winnipeg.		104	2·35	97·65	
Martin Bole, Wynne Co., Winnipeg.		105	3·52	96·48	
Not known		104	2·35	97·65	
R. W. FLETCHER, INSPECTOR.					
Lymam Son & Co		105	3·52	96·48	
Martin Bole and Winn, Winnipeg		105	3·52	96·48	
Bole Drug Co., Calgary		104	2·35	97·65	
Lyman Sons & Co., Montreal		106	4·70	95·30	
Bole Drug Co., Winnipeg		104	2·35	97·65	
E. Merck. Darmstadt, Ger		104	2·35	97·65	
Bole Drug Co., Winnipeg		104	2·35	97·65	
Nat. Drug Co., Montreal		104	2·35	97·65	
" "		104	2·35	97·65	
" "		104	2·35	97·65	
E. B. PARKINSON, INSPECTOR.					
Mallinckroodt Chem. Co., St. Louis.		108	7·04	92·96	
Lyman & Sons, Montreal		105	3·52	96·48	
Evans & Sons, Montreal & Toronto		105	3·52	96·48	
Burgoyne Burbridges & Co., Colman St. London.		109	8·21	91·79	
Henderson Bros, Ltd., Vancouver, B.C.		108	7·04	92·96	
Mallinckroodt Chem. Co., St. Louis.		109	8·21	91·79	
The Dom. Drug Co., Hamilton		105	3·52	96 48	
Henderson Bros., Ltd., Vancouver, B.C.		108	7·04	92·96	
Henderson Bros., Ltd., Vancouver, B.C.		106	4·70	95·30	
Mallinckroodt Chem. Co., St. Louis.		110	9·40	90·60	

TABLE II.—RECORD OF SAMPLES OF PURIFIED CREAM OF TARTAR ANA-

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.
1907.			DISTRICT OF NOVA SCOTIA—		
Aug. 5..	Purified Cream of Tartar	33406	E. S. Blackie, Hollis St., Halifax	6 ozs...	15
" 5..	"	33407	National Drug Co., Halifax	6 " ..	15
" 6..	"	33408	G. A. Burbridge, Hollis St., Halifax	6 " ..	15
" 6..	"	33409	C. A. Barnstead, Granville St., Halifax	6 " ..	15
" 6..	"	33410	Jno. R. Rawley, Halifax	6 " ..	15
" 6..	"	33411	Brown Bros. & Co., Halifax	6 " ..	10
" 6..	"	33412	C. E. Huggins, Jacob St., Halifax	6 " ..	15
" 13..	"	33413	L. C. Gardner & Co., Yarmouth, N. S	6 " ..	20
" 15..	"	33414	J. D. Clark, Kentville, N. S	6 " ..	15
" 16..	"	33415	R. S. Dakin, Windsor, N. S	6 " ..	18
			DISTRICT OF PRINCE EDWARD		
July 25..	Purified Cream of Tartar	31160	Redding Bros., Charlottetown	6 ozs...	18
" 25..	"	31161	J. G. Jameson, Charlottetown	6 " ..	15
" 25..	"	31162	G. E. Hughes, Charlottetown	6 " ..	15
" 26..	"	31163	A. Reddin, Charlottetown	6 " ..	18
" 26..	"	31164	McDonald, McKinnon, Charlottetown	6 " ..	20
" 30..	"	31165	J. C. Ferguson, Souris	6 " ..	25
" 31..	"	31166	J. W. Carruthers, Montague Bridge	6 " ..	15
Aug. 6..	"	31167	P. McNutt & Son, Malpeque	6 " ..	12
" 7..	"	31168	W. Kennedy, Summerside	6 " ..	15
" 7..	"	31169	D. John McNeil, Summerside	6 " ..	15
			DISTRICT OF NEW BRUNSWICK—		
Aug. 26..	Purified Cream of Tartar	29584	Nat. Drug & Chem. Co., Ltd., Mill St. St. John, N.B.	6 ozs...	20
" 27..	"	29585	E. Clinton Brown, St. John, N.B	6 " ..	20
" 29..	"	29586	Can. Drug Co., St. John, N.B	6 " ..	20
" 31..	"	29587	Wm. Hawker, St. John, N.B	6 " ..	20
" 6..	"	29588	The Sussex Mercantile Co. Ltd., Sussex, King's Co., N.B.	6 " ..	15
" 7..	"	29589	James McDonald Cook, Medical Hall, Moncton, N.B.	6 " ..	25
" 9..	"	29590	J. D. B. F. McKenzie, Chatham, N.B	6 " ..	15
" 20..	"	29591	Frank Smith, St. Stephen, N.B	6 " ..	15
" 21..	"	29592	J. M. Wiley, Fredricton, N. B	6 " ..	30
23..	"	29593	Garden Bros., Woodstock, N.B	6 " ..	12

LYZED BY INLAND REVENUE DEPARTMENT—PUBLIC ANALYST LABORATORY

Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Results of Analysis. Acidity (cc.—normal) per 100 grms.	Results of Analysis. Calculated to Bi-tartrate of Potassium.	Opinion of the Chief Analyst
R. J. WAUGH, INSPECTOR.				
National Drug Co., Halifax	Asked for and sold as labeled.	488	91·7	Below standard.
Unknown	" "	478	90·0	"
National Drug Co., Halifax	" "	480	90.2	"
J. P. Mott & Co., Halifax.	" "	482	90·6	"
National Drug Co., Halifax	" "	488	91·7	"
" "	" "	477	89·1	"
" "	" "	478	90·0	"
Dearborn & Co., St. John, N.B.	" "	492	92·5	"
National Drug Co., Halifax	" "	524	98·5	Genuine.
" "	" "	.....	.. ..	Adulterated. Is burnt alum and starch.
ISLAND—T. MOORE, INSPECTOR.				
Not known		528	99·2	Genuine.
Lyman Sons & Co., Montreal		530	99·6	"
Not known		488	91·7	Below standard.
National Drug Co., Montreal		530	99·6	Genuine.
Taylor & Son, Scotland		486	92·0	Below standard.
Howards		468	88·0	"
Not known		496	93·25	"
E. W. Gillett & Co., Toronto		530	99·6	Genuine.
Not known		480	90·2	Below standard.
National Drug Co., Montreal		488	91·7	"
J. C. FERGUSON, INSPECTOR.				
Vendor	Crystals Imported and ground by vendors.	518	97·4	Genuine.
E. W. Gillett & Co., Ltd., Toronto, Ont.	Sample filled from bulk by vendor.	530	99·6	"
Vendors, N.B.	Imported in Crystals by vendors and ground.	484	91·0	Below Standard.
Nat. Drug Co. Ltd., St. John, N.B.	Sample taken from large bottle.	512	96·3	"
Lyman, Sons & Co., Montreal, P.Q.	Sold as pure Cream of Tartar.	530	99·6	Genuine.
E. W. Gillett & Co., Ltd., Toronto, Ont.		508	95·5	Below Standard.
"		528	99·2	Genuine.
Nat. Drug Co., St. John, N.B.		506	95·1	Below Standard.
Colonial Spice Milling Co., Guelph, Ont.	Pkge. marked. Cream of Tartar, recommended for purity strength and uniformity.	470	88·4	"
Nat. Drug Co., St. John, N.B.	Sample taken from large drawer in bulk.	468	88·0	"

TABLE II.—RECORD OF SAMPLES OF PURIFIED CREAM OF TARTAR ANA-

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.
1907.			DISTRICT OF QUEBEC—		
July 30..	Purified Cream of Tartar	26324	Jos. Masson, 808 St. Valier	6 ozs...	42
" 30..	"	26325	Thon. T. Laroche, 735 St. Valier	6 " ..	25
" 30..	"	26326	T. E. Martel, 91 St. Joseph	6 " ..	24
" 30..	"	26327	David Gagnon, 30 St. Pierre	6 " ..	25
" 30..	"	26328	Victor Giroux, Coté Lamontagne	6 " .	20
" 30..	"	26309	W. Brunnette et Cie	6 " ..	30
" 30..	"	26330	C. P. Delisle, 379½ St. Jean	6 " ..	30
" 30..	"	26331	Alfred Jolicoeur, 338 St. Jean	6 " ..	40
" 30..	"	26332	F. E. Gauvereau, 336 St. Jean	6 " ..	30
" 30..	"	26333	T. Edmond Dubé, 28 St. Jean	6 " .	30
			DISTRICT OF ST. HYACINTHE—		
Aug. 6..	Purified Cream of Tartar	27873	Dr. P. A. Brassard, Stanfiold	12 ozs..	25
" 9..	"	27874	Dr. Stevenson, Coaticook	12 " ..	25
" 9..	"	27875	T. A. Bourque & Cie, Sherbrooke	5 Pkts, ¼ lb. each.	30
			DISTRICT OF MONTREAL—		
Aug. 14..	Purified Cream of Tartar	32552	J. T. Lyons Co., Montreal	6 ozs...	25
July 30..	"	32553	Joseph Cantant, 251 Notre Dame St., East, Montreal.	6 " ..	20
" 30.	"	32554	Henry Lanctot, 295 St. Catherine St., Montreal..	6 " ..	15
Aug. 1..	"	32555	O. St. Amour, St. Agathe	6 " ..	30
" 5..	"	32556	Dr. J. E. St. Onge, Valleyfield	6 " ..	25
" 5..	"	32557	Mrs. St. Louis, Valleyfield	6 " ..	30
" 5..	"	32558	Dr. Gauthier, Valleyfield	6 " ..	15
" 5..	"	32559	Dr. Lafontaine, Berthierville	6 " ..	20
" 8..	"	32560	Dr. J. Leduc & Co., Montreal & Co..	6 " ..	20
" 8..	"	32561	J. Hirtz, 54 Craig St., Montreal	6 " ..	20
			DISTRICT OF OTTAWA—		
July 30..	Purified Cream of Tartar	34021	Medical Hall, Hull	6 ozs...	20
" 30..	" " ..	34022	Modern Drug Store, Hull	6 " ...	20
" 29..	" " ..	34023	D. R. DesRosiers, Ottawa	6 " ...	25
" 29..	" " ..	34024	The Jos. Valiquette Co., Ottawa	6 " ...	15
" 30..	" " ..	34025	Beattie & Argue, Ottawa	6 " ...	20
" 30..	" " ..	34026	Allen & Cochrane, Ottawa	6 " ...	20
" 30..	" " ..	34027	Geo. Watson, Ottawa	6 " ...	25
Aug. 6..	" " ..	34028	G. E. Moore, Carleton Place	6 " ...	15
" 7..	" " ..	34029	Wm. Johnson, Smith's Falls	6 " ...	15
" 7..	" " ..	34030	F. L. Hall, Perth	6 " ...	15

LYZED BY INLAND REVENUE DEPARTMENT—Public Analyst Laboratory.

Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Results of Analysis.		Opinion of the Chief Analyst.
		Acidity — per 100 grammes.	Calculated to Bi-tartrate of Potassium.	
E. BELAND, INSPECTOR.				
Nat. Drug & Chem. Co.		470	88·4	Below Standard.
"		474	89·1	"
"		486	92·0	"
Evans & Sons, Montreal		470	88·4	"
Lyman Knox Co., Montreal		478	90·0	"
Not known				Is burnt alum and starch. The word "Commercial" is written in pencil on the bottle. Adulterated.
Dr. Ed. Morin et Cie		464	87·2	Below Standard.
Not known		476	89·5	"
Lyman Sons Co., Montreal		456	85·7	"
Not known		494	92·9	"
J. C. ROULEAU, INSPECTOR.				
J. E. Liverriais, Quebec		470	88·4	Below Standard.
Lyman, Sons & Co., Montreal		478	90·0	"
S. H. Ewing & Son, Montreal	Pkges marked, pure ground ¼ lb., Cream of Tartar.	480	90·2	"
J. J. COSTIGAN, INSPECTOR.				
Nat. Drug & Chem. Co		484	91·0	Below Standard.
Not known		490	92·1	"
"				A mistake in filling the order. Is a sample of Rochelle Salts.
Lyman Sons		456	85·7	Below Standard.
"		494	92·9	"
Not known		482	90·6	"
"		476	89·5	"
"		474	89·1	"
"		484	91·0	"
Lyman Sons		472	88·7	"
J. A. RICKEY, INSPECTOR.				
National Drug and Chemical Co.	99 per cent pure	476	89·5	Below standard.
Lyman, Knox Co.		476	89·5	"
Ottawa Drug Co., Ottawa		476	89·5	"
Lyman Sons & Co., Montreal	Would not guarantee pure.	474	89·1	"
National Drug Co., Ottawa	99 per cent pure	476	89·5	"
Lyman Sons Co., Montreal		470	88·4	"
"		484	91·0	"
National Drug and Chemical Co.	99 per cent pure	524	98·5	Genuine.
" "	"	476	89·5	Below Standard.
Lyman Sons & Co.	Gillett's Brand	526	98·9	Genuine.

TABLE II.—RECORD OF SAMPLES OF PURIFIED CREAM OF TARTAR ANA-

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.
1907.			DISTRICT OF KINGSTON—		
July 23..	Purified Cream of Tartar	32465	A. J. Chown, Kingston	3 ozs...	15
" 23..	" " ..	32467	W. W. Gibson, Kingston	3 " ...	15
" 23..	" " ..	32468	H. Wade, Kingston	3 " ...	15
" 23..	" " ..	32469	L. P. Best, Kington	3 " ...	20
" 23..	" " ..	32470	H. Skinner & Co., Kingston	3 " ...	15
" 23..	" " ..	32471	G. Mahood, Kingston	3 " ...	20
" 23..	" " ..	32472	W. H. Medley, Kingston	3 " ...	20
" 23..	" " ..	32473	F. J. Hoag, Kingston	3 " ...	20
" 24..	" " ..	32474	J. B. McLead, Kingston	3 " ...	20
" 26..	" " ..	32475	R. Templeton, Belleville Front	3 " ...	15
			DISTRICT OF TORONTO—		
Aug. 9..	Purified Cream of Tartar	33311	A. E. Walton, Ltd., 714 Queen St. E., Hamilton	6 ozs...	15
" 12..	" " ..	33312	Parke & Parke, 18 Market Square, Hamilton	6 " ...	15
" 12..	" " ..	33313	F. W. Mills, 332 King St. E., Hamilton	6 " ...	15
" 12..	" " ..	33314	Hawkins, Ltd., 315 Barton St. E., Hamilton	6 " ...	12
" 15..	" " ..	33315	S. B. Skobell, 13 James St., St. Catherines	6 " ...	20
" 15..	" " ..	33316	Walker & Abbs, 30 Queen St., St. Catherines	6 " ...	15
" 15..	" " ..	33317	F. W. Jeffs, 68 King St., St. Catherines	6 " ...	10
" 19..	" " ..	33318	H. W. Smith, Erie Ave., Niagara Falls	6 " ...	15
" 19 .	" " ..	33319	W. W. Ker, Niagara Falls South	6 " ...	20
" 21..	" " ..	33320	Crown Drug Store, 278 Yonge St., Toronto	6 " ..	15
			DISTRICT OF BRITISH COLUMBIA—		
Aug. 1..	Purified Cream of Tartar	32152	T. A. Muir & Co., New Westminster, B.C.	6 ozs...	30
" 1..	" " ..	32153	D. S. Curtis, New Westminster, B.C.	6 " ...	40
" 9..	" " ..	32154	LePatournal & McRae, Vancouver, B.C.	6 " ...	55
" 9..	" " ..	32155	Jno. Reed, Granville St., Vancouver, B.C.	6 " ...	45
" 9..	" " ..	32156	McDowell-Atkins-Watson Co., Ltd., Vancouver	6 " ...	30
" 9..	" " ..	32157	W. M. Harrison & Co., Vancouver, B.C.	6 " ...	30
" 9..	" " ..	32158	Woodward Dept. Stores, Vancouver, B.C.	6 " ...	25
" 9..	" " ..	32159	The Red Cross Pharmacy, Vancouver, B.C.	6 " ...	50
" 16..	" " ..	32160	F. J. MacKenzie, Ladner, B.C	6 " ...	25
" 19..	" " ..	32161	E. S. Knowlton Drug Store, Vancouver, B.C.	6 " ...	35

LYZED BY INLAND REVENUE DEPARTMENT—Public Analyst Laboratory.

Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Results of Analysis.		Opinion of the Chief Analyst.
		Acidity per 100 grammes.	Calculated to Bi-tartrate of Potassium.	
J. HOGAN, INSPECTOR.				
Lyman Sons & Co., Montreal		504	94·7	Below standard.
Not known		466	87·6	"
Lyman Sons & Co., Montreal		526	98·9	Genuine.
Howard & Sons		470	88·4	Below standard.
H. Skinner & Co., Kingston		478	90·0	"
Lyman Sons, Montreal		470	88·4	"
H. Skinner & Co., Kingston		468	88·0	"
" "		472	88·7	"
" "		474	89·1	"
Evans & Sons, Montreal		472	88·7	"
H. J. DAGER, INSPECTOR.				
Elliott & Co., Toronto		464	87·2	Below standard.
Todhunter & Mitchell		526	98·9	Genuine.
J. Winer & Co., Hamilton		486	92·0	Below Standard.
Dalton Bros				Is burnt alum and starch. Adulterated.
E. W. Gillett, Toronto		510	95·9	Below standard.
Dominion Drug Co., Hamilton		470	88·4	"
" "		474	89·1	"
Lyman Bros., Toronto		494	92·9	"
Dominion Drug Co., Hamilton		472	88·7	"
Lyman Bros., Toronto		468	88·0	"
E. B. PARKINSON, INSPECTOR.				
Henderson Bros., Ltd., Vancouver		526	98·9	Genuine.
Lyman & Sons, Montreal		524	98·5	"
Dominion Drug Co., Hamilton		486	92 0	Below standard.
Henderson Bros., Ltd., Vancouver		526	98·9	Genuine.
" "		528	99·2	"
Wm. Braid & Co., Vancouver, B.C.	Would not guarantee pure cream tartar but would mark it commercially pure.	522	98·1	"
E. W. Gillett, Toronto, Ont.		530	99·6	"
Henderson Bros., Ltd., Vancouver		528	99·2	"
" "	Same as Sample No. 32157	530	99·6	"
National Drug Co., Montreal	Marked chemically pure	514	96·6	Below standard.

TABLE III.—RECORD OF SAMPLES OF CREAM OF TARTAR ANALYZED

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.
1907.			DISTRICT OF ST. HYACINTHE—		
Aug. 1..	Cream of Tartar	27872	D. Houde, Nicolet.....	1 lb.....	40
" 14..	"	27876	Wright & Co., St. Jean.....	12 ozs..	35
" 15..	"	27871	J. B. McLean, Farnham.	3 boxes.	60
" 21..	"	27877	Dr. Daignault, Actonvale.....	12 ozs..	30
" 22..	"	27878	T. England & Sons, Knowlton.....	2tins¼lb. each.	25
" 26..	"	27879	J. B. St. Pierre, St. Hyacinthe.....	12 ozs...	30
" 27..	"	27870	R. E. Bertrand, Magog	12 " ..	30
			DISTRICT OF LONDON—		
July 29..	Cream of Tartar	30388	R. F. Gill, St. Marys.....	½ lb.....	20
" 2..	"	30405	W. J. Cherney, Windsor.....	½ "	20
Aug. 13..	"	30415	Reeks & Co., St. Thomas.....	½ "	20
" 13..	"	30418	Cairncross & Lawrence, London, Ont.....	½ "	25
" 14..	"	30422	Jno. E. Gayfer.....	½ "	20
" 14..	"	30423	J. H. Nasmyths, Woodstock..	½ "	25
" 15..	"	30428	Deans & Walker, Gault.....	½ "	20
" 15..	"	30430	Dunke & Co., Berlin.....	½ "	20
" 15..	"	30433	Beck & Schell, Berlin	¾ "	30
" 16..	"	30434	Walter Beattie, Guelph.	½ "	20
			DISTRICT OF MANITOBA—		
Aug. 6..	Cream of Tartar	25612	Winnipeg Drug Hall, Winnipeg..	6 ozs....	15
" 6..	"	25615	Cranston's Drug Store, Winnipeg	6 " ..	30
" 6..	"	25618	W. W. Bradshaw, Winnipeg	6 " ..	20
" 6..	"	25621	Colcleugh's Drug Store, Winnipeg.....	6 " ..	45
" 7..	"	25624	W. F. C. Braithwaite, Winnipeg.....	6 " ..	25
" 7..	"	25627	Gordon Mitchell Co., Winnipeg.....	6 " ..	10
" 7..	"	25637	Connell & Co., Winnipeg.....	6 " ..	20
" 7..	"	25640	The T. Eaton Co	6 " ..	15
" 10 .	"	25652	R. D. Bruce, Winnipeg.....	6 " ..	25
" 10..	"	25655	Thornton Andrews	6 " ..	20

SESSIONAL PAPER No. 14

BY INLAND REVENUE DEPARTMENT—Public Analyst Laboratory.

Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Results of Analysis.		Opinion of the Chief Analyst.
		Acidity per 100 grammes.	Calculated to Bitartate of potassium.	
J. C ROULEAU, INSPECTOR.				
Nat. Drug & Chem. Co., Ltd., Montreal.	Nat. Brand guaranteed 100 per cent. pure put up in 1 lb. pkgs.	524	98·5	
E. W. Gillett & Co., Toronto		522	98·1	
Pure Gold Co., Toronto	Boxes marked Pure French Cream of Tartar, warranted 8 oz. net.	466	87·6	
Lyman Sons & Co., Montreal		480	90·2	
Lockerby Bros. Ltd	"Cherry Blosom brand" guaranteed pure and free from adulteration whatever.			Consists of acid phosphate and starch — Adulterated.
L. Chaput Fils & Co., Montreal		478	90·9	
" "		470	88·4	
T. KIDD, INSPECTOR.				
E. W. Gillett & Co., Toronto	Mr. Inspector Kidd has invoiced all these samples of Cream of Tartar.	492	92·5	
" "		528	99·2	
Lucas Steele & Bristol, Hamilton.		494	92 9	
Gillott & Co., Toronto		528	99·2	
Lyman Bros, Toronto		476	89·5	
Gillott & Co		504	94·7	
W. G. Dunn, Hamilton		526		Contains burnt alum and starch in addition to bitartrate of potash—Adulterated.
W. F. Lally & Co., Hamilton		470	88·4	
Gorman & Eckart, London		512	96·3	
J. Winer & Co., Hamilton		490	92·1	
A. C. LARIVIÈRE, INSPECTOR.				
Martin, Bole, Wynne Co., Winnipeg.	Mr. Inspector Larivière has invoiced all his samples as Cream of Tartar.	486	92·0	
Lyman Bros., Toronto		434	81·6	
Martin, Bole, Wynne Co., Winnipeg.		490	92·1	
Not known				Sodium Carbonate—Adulterated, perhaps a blunder in dispensing.
Lyman Sons, Montreal		471	88·7	
Not known		492	92·5	
"		528	99·2	
"		506	95·1	
"		524	98·5	
"		494	92·9	

TABLE III.—RECORD OF SAMPLES OF CREAM OF TARTAR ANALYZED

Date of Collection.	Name of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.
1907.			DISTRICT OF CALGARY—		
Aug. 17..	Cream of Tartar	28831	C. S. Pringle, Medicine Hat	6 ozs.	30
" 17..	"	28832	L. B. Cochran, Medicine Hat	6 "	20
" 17..	"	28833	B. F. Souch, Medicine Hat	6 "	25
" 17..	"	28834	Leonard & Harris	6 "	45
" 17..	"	28835	E. M. Cawker	6 "	25
" 29 ..	"	28836	Revillon Bros., Edmonton	3 pkgs.	50
" 29..	"	28837	The Acme Co. Ltd., Edmonton	6 ozs.	20
" 29..	"	28838	K. McKenzie & Co., Edmonton	3 pkgs.	30
" 29..	"	28839	The Capital Mercantile Co., Edmonton	3 "	50
" 29..	"	28840	L. Lambert, Edmonton	3 tins	75

SESSIONAL PAPER No. 14

BY INLAND REVENUE DEPARTMENT—Public Analyst Laboratory.

Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Results of Analysis.		Opinion of the Chief Analyst.
		Acidity per 100 grammes.	Calculated to Bi-tartate of potassium.	
R. W. FLETCHER, INSPECTOR.				
Lyman Sons & Co., Montreal....	Mr. Inspector Fletcher has invoiced all these samples as Cream of Tartar.	482	90·6	
W. Braid & Co., Vancouver, B.C.		496	93·2	
Bole Drug Co., Calgary..		500	94·0	
The Dyson Co., Winnipeg.		482	90·6	
Bole Drug Co., Winnipeg		418	88·6	
E. W. Gillett & Co., Toronto....		506	95·1	
" " ...		344	64·7	(Available) contains bi-carbonate of soda, doubtful.
" "		512	96·3	
Pure Gold Mfg. Co., Toronto....		508	95·5	
The Dyson Co., Winnipeg. ...		474	89·1	

APPENDIX J.

BULLETIN No. 144—CONDENSED MILK

OTTAWA, January 3, 1908.

W. J GERALD, Esq.,
Deputy Minister of Inland Revenue.

SIR,—I beg to hand you a report of work upon 142 samples of condensed milk collected in July and August of last year.

The numbers obtained from each Inspectoral district, are as follows:—

	Unsweetened.	Sweetened.
Nova Scotia	2	3
Prince Edward Island	1	3
New Brunswick	3	7
Quebec	11	9
St. Hyacinthe	0	5
Montreal	3	12
Ottawa	5	5
Kingston	6	10
Toronto	3	7
London	3	4
Manitoba	5	10
Calgary	6	10
British Columbia	5	10
	47	95

A sample (No. 31173) of an Infant's food, was collected, by mistake, in the district of Prince Edward Island. In the Calgary district, two different brands, as mistaken duplicates, were obtained, under the number 28780.

Details of work done in this laboratory, are given in Tables I, II, and III. In Table IV an attempt is made to calculate the degree of condensation of the original milk, and the fat content of such milk.

The conclusions thus reached possess considerable interest; but they must not be taken as fully established, since the methods of calculation involve certain hypotheses as explained in the accompanying notes.

I may summarize the more important results of this investigation, as follows:—

1. Condensed milk, should mean the reduction of volume of normal milk, by evaporation of a greater or less portion of its water.

2. When sugar is added, this fact should be stated on the label: and preferably, if not necessarily, in the name of the article, as *Sugared* or *Sweetened* condensed milk.

3. The word *Cream*, is largely used to designate condensed milk. This is incorrect, and should be made illegal. As a matter of fact, these so-called "creams" are not any richer in milk fat than the sugared condensed milks, and many of them are distinctly poorer.

4. Among the samples examined, only one (No. 25628) is entitled to be called a cream.

5. The average milk value of most of these samples, shows them to be about 2·3 to 2·5 times the value of normal whole milk. Hence, a dilution to about two and a half (2·5) times their volume, results in converting them, for practical purposes, into milk.

The instructions for dilution printed upon the labels, are quite misleading in many cases. "For making a rich cream add from one to two parts pure water." The result would be a liquid containing about 3 to 4 per cent. of milk fat: and would be in no sense a "rich cream."

Several brands advise the addition of three parts water, to make "a pure rich, economical milk." Such a dilution would give a resultant containing about 2 per cent. of fat:—The sugared milks bear larger dilution, without evident reduction of "body"; but the fat content being practically identical with that of the non-sugared kinds, the product of dilution cannot be regarded as other than a very poor milk, thickened with sugar. One brand advises the addition of four (4) parts of water, to produce a rich milk. This would give an article containing distinctly less than 2 per cent. of milk fat.

It may be contended that the consumer should use his own judgment in diluting. While this is true, it is no justification of the manufacturer who states that the product will be "*a rich milk*," &c.

6. *Duplicates*, as collected by our inspectors, are always distinct, sealed packages. They do not necessarily represent the same batch, and even when they do so, it does not follow that they are strictly similar in composition. This matter has been considered exhaustively by the late Chief Analyst. (See Bulletin 69, page 20). "I am not convinced that *absolute* uniformity of product is attainable in any condensed milk factory." This conclusion was reached after very extended work done upon samples which had been manufactured under Mr. Macfarlane's direction, in five different factories, and with every attention to detail. The results now reported indicate that, while a general approximation to a type is found among samples bearing the same name, occasional deviations of considerable amount occur.

I beg to recommend the publication of this report as Bulletin No. 144.

I have the honour to be, Sir,
Your obedient servant,

A. McGILL,
Chief Analyst.

CONDENSED MILK.

This is generally understood to be *whole milk*, from which a more or less considerable portion of the water has been removed by evaporation.

No legal definition or standard for this article has been established in Canada.

In the United States, the following definitions were legally authorized in June, 1906.

1. *Condensed Milk, Evaporated Milk*, is milk from which a considerable portion of water has been evaporated, and contains not less than twenty-eight per cent of milk solids, of which not less than twenty-seven and five tenths (27.5) per cent is milk fat.

According to this definition, Condensed Milk should contain at least seven and seven tenths (7.7) per cent of milk fat.*

2. *Sweetened Condensed Milk*, is milk from which a considerable portion of water has been evaporated, and to which sugar (sucrose) has been added, and contains not less than twenty eight (28) per cent of milk solids, of which not less than twenty seven and five tenths (27.5) per cent is milk fat.

3. *Condensed Skim milk*, is skim milk from which a considerable portion of water has been evaporated.

4. *Evaporated Cream, Clotted Cream*, is cream from which a considerable portion of water has been evaporated.

The same authority defines milk as containing a minimum of 3.25 per cent, and cream as containing a minimum of 18 per cent of milk fat.

To produce condensed milk of standard quality, as above defined, from milk of minimum standard quality, 2.37 lbs. of milk, are required for each 1 lb. of condensed milk;* that is, about 2·4 volumes will be concentrated into 1 volume, or the concentration will be 2·4. In order to make such a product represent normal milk, it is only necessary to add to it $(2{\cdot}4 - 1) = 1{\cdot}4$ volumes of water. Of course, where richer milk is used, the product will be of a higher grade, for the same degree of concentration; or, conversely, a less concentration will give a standard condensed milk.

When sugar is added, it is evident that the concentration must proceed further in order to give a product containing the same weight percentage of fat. The accompanying tables show that samples of plain, concentrated milks, containing about eight per cent of fat, possess a mean density of about 1·075; while sugared samples, as found on the market, with about 8 per cent of fat, have a density of 1·310 to 1·320.

In table IV, an attempt has been made to calculate from analytical data, the volume concentration, and the fat content of the original milk. In order to this end, it is neccssary to make certain assumptions, chief of which are the following:—

(*a.*) That the non-fat solids of milk are not increased or diminished by the processes of manufacture.

(*b.*) That the non-fat solids of the milk are known. (This table is calculated on a basis of 9 per cent., and also, of 8·5 per cent., for non-fat solids. In Bulletin 142 will be found reasons for adopting 8·5 as a minimum for non-fat solids. Better grades of milk, as found in Canada indicate 9 per cent. non-fat solids.)

(*c.*) That, where cane sugar has been added, the amount used is 40 per cent. of the weight of the finished product. **

On account of the assumptions which it involves, this table must be regarded as approximately correct only. That its indications are not far removed from the truth is shown by their close correspondence with results derived from independent data. The concentration for non-sugared milks varies between 2·19 and 2·69; while it has been shown that, on the basis of the United States standard, this value, for minimum quality

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* $\frac{27{\cdot}5}{100} \times 28 = 7{\cdot}7$.

† If m parts by weight of milk, lose w parts of water on concentration, the resultant concentrate will weigh $m - w$; and $\frac{3{\cdot}25\,m}{100} = \frac{7{\cdot}7\,(m-w)}{100}$ Whence $(m - w) : m :: 3{\cdot}25 : 7{\cdot}7 = \frac{1}{2{\cdot}37}$

milk, would be about 2·4. Assuming 9 per cent for non-fat solids in the original milk, these extremes become 2·07 and 2·54. In the case of sugared milks, the concentration works out to from 2·43 volumes to 3·64 volumes, on the basis of 8·5 per cent non-fat solids.

The samples now reported (142 in number) are classified as *non-sweetened* condensed milk (Table II) and *sweetened* condensed milk (Table III).

A better name for the former class would be simply *Condensed milk.* But it happens that the sweetened variety was first placed upon the market, at least in large amount; † and the name *Condensed milk* carries with it, to most purchasers the idea of a sugared milk. Hence the term *Non-sweetened* or *plain* comes to be a more or less necessary distinction.

Many of the non-sugared milks now reported were sold as Cream; and one of them is distinctly named such on the label. With the single exception of a sample (No. 25628) obtained in Winnipeg, none of these are cream; and are, indeed, no richer in milk fat than most of the sugared milks. It is probable that the extensive use of the term *Creams* for this class of condensed milk, is due to its convenience as distinguishing them from the sweetened kinds; but such a use of the word cream should be made illegal, not only in the interest of the purchaser, but also in that of any manufacturer, who may wish to put a true cream on the market.

Owing to the absence of any legal standard for this class of goods, it is impossible to characterize the samples now reported, as genuine or otherwise. In Table II, the unsweetened milks are arranged alphabetically, according to the name of the brand; and in Table III, the sugared milks are treated in the same fashion.

It will be noted that, of nine (9) brands of unsweetened milk, only one reaches the United States standard of 7·7 per cent milk fat, (No. 25628, which contains 25·20 per cent of fat is a true cream; and cannot be classed with the other samples, which although sold under the name "Cream" are merely ordinary concentrated milks.)

Of nineteen (19) brands of sugared milks, only three fall distinctly below the 7·7 per cent standard for fat. One of these brands (Pheasant) contains only 5·10 per cent of fat; and is a condensed skim-milk.

Condensed milk was made the subject of inspection in 1897 (Bulletin No. 54), and in 1900 (Bulletin No. 69). Eighteen brands were represented in the collections made in 1897 and 1900. Of the 28 different brands, represented by the present collection, only eight bear names which appear in Bulletins 54 and 69. The following synopsis gives a comparison of results as found in 1900, with those recorded in the present report, for the eight brands which appear in both collections:—

Name of Brand.	Inspection of 1900.		Present Inspection,	
	Samples.	Fat p.c.	Samples.	Fat p.c.
Clover	1	5·43	9	7·91
Eagle	23	8·78	12	8·00
Export	13	10·32	3	8·23
Jersey*	9	6·25	8	8·08
Mayflower	4	8·94	2	7·50
Nestle's	4	8·98	3	7·87
Owl	13	9·38	2	7·68
Reindeer	15	9·25	20	8·61

** In Bulletin 54 (January 1898) appear the results of analysis of 92 samples of condensed milk, in which the added sugar was determined, as closely as possible, and an average of about 40 per cent was found. The amount, however, varied from about 36 per cent to 43 per cent, and in one brand reached 47 per cent.

† Thus, of 16 brands examined in 1898, only 3 contained no sugar; while of 12 brands examined in 1900, only 2 brands contained no sugar.

* From Bulletin 54, inspection of 1897.

In Tables II and III, it is apparent that a high degree of uniformity in milk-fat value characterizes the brands in which considerable numbers have been analysed. At the same time, occasional variation occurs; a matter not at all surprising when the conditions of manufacture are kept in mind. It makes it important however, to distinguish between results obtained from work upon a single sample, and those obtained from work upon a considerable number of samples. It is only when an average result, obtained by analyzing several samples, is presented that we are justified in accepting it as typical for the brand in question.

A. McGILL,
Chief Analyst.

TABLE II.—UNSWEETENED CONDENSED MILK.

Name of Brand.	Sample.	Density.	Milk Solids.		
			Total.	Fat.	Non-Fat.
Anchor	33340	1·070	25·55	6·50	19·05
Carnation	32172	1·065	24·94	6·93	18·01
Dahl's	32166	1·033	11·66	6·77	4·89
Gold Reef	25628	0·987	31·94	25·20	6·74
Jersey	25629	1 076	27·93	7·47	20·46
"	25649	1 070	28·70	8·59	20·11
"	26268	1 075	27·23	8·59	18·64
"	26272	1·074	24·85	8·05	16·80
"	32173	1·083	30·34	7·92	22·42
"	32807	1·073	29·01	7·91	21·10
"	32815	1·076	25·61	7·94	17·67
"	34039	1·079	30·03	8·20	21·83
	Means	1·076	27·96	8·08	19·88
Peerless	25643	1·076	27·46	6·35	21·11
"	25646	1·078	27·46	6·35	21·11
"	26256	1·073	25·64	5·70	19·94
"	26259	1·072	25·65	5·98	19·67
"	26273	1·082	29·68	7·91	21·77
"	28769	1·074	27·23	6·65	20·58
"	28776	1·067	25 63	6·40	19·23
"	28780	1·075	25·83	6·93	18·90
"	30404	1·075	26·49	6·18	20·31
"	33338	1·070	25·65	6·13	19·52
"	34036	1·071	30·04	6·94	23·10
	Means	1·074	26·98	6·50	20·48
Reindeer Cream	26263	1·082	25 97	6·94	19·03
"	26271	1·081	29·00	7·34	21·66
"	29528	1·079	29·26	7·46	21·80
"	34038	1·081	29·11	7·04	22·07
	Means	1·081	28·33	7·20	21·13
St. Charles	26254	.....	27·92	6·66	21·26
"	26267	1·081	29 30	7·20	22·10
"	26269	1·085	28·58	6·22	22·36
"	26270	1·074	26·93	6·58	20·35
"	28767	1·072	25·10	6·64	18 46
"	28771	1·070	25·23	6·95	18·28
"	28774	1·073	25·37	6·23	19·14
"	29526	1·067	25·01	7·44	17·57
"	30381	1·085	31·08	7·63	23·45
"	30389	1·075	24·48	7·16	17·32
"	32174	1·071	27·96	7·48	20·48
"	32803	1·078	29·34	7·50	21·84
"	33332	1·075	24·36	7·48	16·88
"	33404	1·079	28·43	6·75	21·68
"	34037	1·082	28·06	7·18	20·88
"	34040	1·070	25·86	8·49	17·37
	Means	1·071	27·06	7·10	19·96
Victor	29529	1·082	29 64	7 69	21·95
"	31171	1·076	28·05	6·41	21·64
"	32175	1·079	29·75	7·90	21·85
"	33405	1·081	29·67	7·70	21·97
	Means	1·080	29·28	7·43	21·85

TABLE III—SWEETENED CONDENSED MILK.

Name of Brand.	Number.	Density.	Solids.		
			Total.	Fat.	Difference.
Challenge	26257		69·12	7·60	61·52
"	32802		68·00	7·20	60·80
"	33333		69·57	7·32	62·25
	Means	1·30	68·90	7·37	61·53
Clover	092		71·60	8·15	63·45
"	26264		71·35	7·37	63·98
"	29533		69·82	8·35	61·47
"	32176		71·55	8·40	63·15
"	32479		72·50	7·87	64·63
"	32484		73·25	8·00	65·25
"	32812		71·92	8·12	63·80
"	33336		71·45	8·00	63·45
"	33403		72·60	7·95	64·65
	Means	1·32	71·78	7·91	63·87
Diploma	33339	1·32	73·07	8·92	64·15
Eagle	093		70·10	8·00	62·10
"	30378		70·45	8·67	61·78
"	30392		69·55	7·87	61·68
"	32171		68·05	7·57	60·48
"	32476		68·90	8·32	60·58
"	32477		66·05	7·75	58·30
"	32478		69·12	8·75	60·37
"	32482		70·51	7·82	62·69
"	32483		66·57	7·87	58·70
"	32804		68·87	7·50	61·37
"	33337		65·67	7·60	58·07
"	34033		68·60	8·25	60·35
	Means	1·31	68·50	8·00	60·50
Empire	32164	1·31	70·82	8·55	62·27
Export	25644		70·27	8·25	62·02
"	25645		69·12	7·70	61·42
"	32811		69·20	8·75	60·45
	Means	1·32	69·53	8·23	61·30
Express	29527		67·95	7·95	60·00
"	31172		69·44	7·90	61·54
	Means	1·31	68·69	7·93	60·76
Gold Seal	094		66·17	7·90	58·27
"	25633		69·10	7·20	61·90
"	25648		71·05	7·35	63·70
"	26262		70·05	7·70	62·35
"	28773		70·35	7·60	62·75
"	28779		68·72	7·25	61·47
"	28780		69.75	7.35	62·40
"	32162		70·02	7·50	62·52
"	32167		69·95	7·25	62·70
"	32808		68·82	7·25	61·57
"	34035		66·35	7·35	59·00
	Means	1·31	69·12	7·33	61·79

TABLE III—CONDENSED SWEETENED MILK—*Continued*

Name of Brand.	Number.	Density.	Solids.		
			Total.	Fat.	Difference.
Good Luck	25642		70·27	7·65	62·62
"	32810		69·37	7·62	61·75
"	33334		67·70	7·65	60·05
"	33402		70·00	8·00	62·00
	Means	1·31	69·34	7·73	61·61
Lion	31170	1·31	67·35	7·62	59·73
Mayflower	29530		70·97	7·29	63·68
"	32814		69·62	7·72	61·90
	Means	1·31	70·30	7·50	62·80
Nestles	25632		69·52	8·37	61·15
"	32480		70·80	8·12	62·68
"	34031		64·72	7·12	57·60
	Means	1·30	68·35	7·87	60·48

TABLE III.—SWEETENED CONDENSED MILK.

Name of Brand.	Number.	Density.	Solids.		
			Total.	Fat.	Difference.
Oak	095		70·65	8·42	62·23
"	25631		70·57	8·75	61·82
"	25647		71·84	8·00	63·84
"	28775		70·70	8·57	62·13
"	31174		72·27	9·12	63·15
"	32170		69·35	8·20	61·15
	Means	1·31	70·90	8·51	62·39
Owl	29525		69·75	7·62	62·13
"	32809		73·30	7·75	65·55
	Means	1·33	71·53	7·68	63·85
Pheasant	32165		69·16	5·32	63·84
"	32169		67·42	4·87	62·55
	Means	1·31	68·29	5·10	63·29
Purity	29531	1·30	69·42	7·87	61·55
Reindeer	25634		72·40	8·40	64·00
"	26255		74·12	8·88	65·24
"	26258		73·16	8 54	64·62
"	26260		73·40	8·52	64·88
"	26265		74·64	8·58	66·06
"	28766		71·64	8·30	63·34
"	28768		71·96	8·70	63·26
"	28770		72·64	8·58	64·06
"	28772		73·06	8·90	64·16
"	28778		73·84	8·94	64·90
"	29524		71·25	8·25	63·00
"	30399		74·36	8·44	65·92
"	32163		72 32	8·52	63·80
"	32168		73·18	8·60	64·58
"	32805		72·74	8·34	64·40
"	32813		72·18	8·60	63·58
"	33331		73·20	8·91	64·29
"	33401		67·14	8·32	58·82
"	34032		73·50	8·16	65 34
"	34034		72·00	9·80	62·20
	Means	1·32	72·63	8·61	64·02
Silver Cow	091		71·35	7·95	63·40
"	25630		68·42	7·55	60·87
"	26261		70·70	7·75	62·95
"	26266		71·42	7·85	63·57
"	28777		69·00	7·45	61·55
"	29532		66·17	7·35	58·82
"	30384		72 95	7 72	65·23
"	32481		70·75	7·50	63·25
"	32485		72·62	8·22	64·40
"	32806		71·25	7·40	63·85
"	33335		69·12	7·35	61·77
	Means	1·31	70·34	7·64	62·70
Strathcona	32801	1·28	65·00	8·32	56·68

TABLE IV. APPROXIMATE CONCENTRATION, AND FAT CONTENT OF ORIGINAL MILK—CALCULATED.

Name of Brand.	Samples Examined.	Density.	Solids.			Cane Sugar.	Concentration.		Original Fat.	
			Total.	Fat.	Difference.		9 p.c.	8·5 p.c.	9 p.c.	8·5 p.c.
Anchor	1	1·070	25·55	6·50	19·05	–	2·20	2·30	3·07	2·90
Carnation	1	1·065	24·94	6·93	18·01	–	2·07	2·19	3·46	3·27
Dahl's	1	1·033	11·66	6·77	4·89	–	–	–	–	–
Gold Reef	1	0·987	31·94	25·20	6·74	–	–	–	–	–
Jersey	8	1·076	27·96	8·08	19·88	–	2·20	2·40	3·66	3·45
Peerless	11	1·074	26·98	6·50	20·48	–	2·37	2·51	2·85	2·69
Reindeer Cream	4	1·081	28·33	7·20	21·13	–	2·46	2·61	3·07	2·90
St. Charles	16	1·071	27·06	7·10	19·96	–	2·31	2·45	3·20	3·02
Victor	4	1·080	29·28	7·43	21·85	–	2·54	2·69	3·06	2·90
Challenge	3	1·30	68·90	7·37	61·53	40·00	3·00	3·17	3·08	2·81
Clover	9	1·32	71·78	7·91	63·87	"	3·40	3·60	3·00	2·83
Diploma	1	1·32	73·07	8·92	64·15	"	3·44	3·64	3·33	3·14
Eagle	12	1·31	68·50	8·00	60·50	"	2·90	3·07	3·51	3·32
Empire	1	1·31	70·82	8·55	62·27	"	3·15	3·33	3·45	3·26
Export	3	1·32	69·53	8·23	61·30	"	3·03	3·20	3·49	3·30
Express	2	1·31	68·69	7·93	60·76	"	2·93	3·10	3·44	3·26
Gold Seal	11	1·31	69·12	7·33	61·79	"	3·08	3·26	3·03	2·96
Good Luck	4	1·31	69·34	7·73	61·61	"	3·05	3·23	3·22	3·04
Lion	1	1·31	67·35	7·62	59·73	"	2·80	2·97	3·47	3·28
Mayflower	2	1·31	70·30	7·50	62·80	"	3·22	3·41	2·96	2·80
Nestle's	3	1·30	68·35	7·87	60·48	"	2·85	3·02	3·46	3·28
Oak	6	1·31	70·90	8·51	62·39	"	3·16	3·33	3·42	3·25
Owl	2	1·33	71·53	7·68	63·85	"	3·42	3·63	2·90	2·74
Pheasant	2	1·31	68·29	5·10	63·29	"	3·29	3·48	1·97	1·86
Purity	1	1·30	69·42	7·37	61·55	"	3·02	3·20	3·29	3·11
Reindeer	20	1·32	72·63	8·61	64·02	"	3·42	3·61	3·23	3·04
Silver Cow	11	1·31	70·34	7·64	62·70	"	3·21	3·41	3·03	2·96
Strathcona	1	1·28	65·00	8·32	56·68	"	2·30	2·43	4·48	4·23
	142									

The 'Concentration,' i.e. number of volumes of milk which are condensed into one volume and the 'Original Fat,' i.e. percentage of fat in the milk employed in manufacture, are found by the following formulas :—

Let c = Concentration.
" a = Non-fat solids as found.
" a^1 = " in normal milk.
" s = Specific gravity of the sample.
" s^1 = " normal milk.
" f = Fat, as found, per cent.
" f^1 = " per cent in original milk used in manufacture.

Then $c = \frac{as}{a^1 s^1}$ and $f^1 = \frac{fa^1}{a}$

If we take $s^1 = 1{\cdot}03$ and $a^1 = 9$, these formulas become

$$c = \frac{as}{9{\cdot}27} \qquad f^1 = \frac{9f}{a}$$

If we take $s^1 = 1{\cdot}03$ and $a^1 = 8{\cdot}5$, then the formulas become

$$c = \frac{as}{8{\cdot}755} \qquad f^1 = \frac{8{\cdot}5f}{a}$$

These formulas have been used in calculating the numbers under the headings *Concentration* and *Original Fat*, in Table IV.

TABLE I.—RECORD OF FOOD SAMPLES OF CANNED MILK AND CREAM ANALYZED

Date of Collection.	Nature of Sample.	No of Sample.	Name and Address of Vendor.	Cost, Quantity.	Cost, Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.
1907						
			DISTRICT OF NOVA SCOTIA—			
Aug. 5.	Canned Milk...	33401	R. B. Adams, Duke St., Halifax. N. S.	3 tins.	45	Truro Condensed Milk Co., Truro, N.S.
"	" ...	33402	J. D. Stewart, Grafton St., Halifax, N. S.	"	30	St. Charles Condensing Co., St. Charles, Ill.
"	" ...	33403	Jas. Hogan, Prince St., Halifax, N. S.	"	36	Truro Condensed Milk Co., Truro, N.S.
"	Canned Cream..	33404	Lardei, Hubley & Co., Barrington St., Halifax, N.S.	"	45	St. Charles Condensing Co., Ingersoll, Ont.
"	" ..	33405	Dillon Bros., Sackville St., Halifax, N. S.	"	30	Charlottetown Condenséd Milk Co., Charlottetown, P.E.I.
			DISTRICT OF PRINCE EDWARD ISLAND—			
July 30	Canned Milk....	31170	Sterns Bros., Souris.....	3 tins.	45	Charlottetown Condensed Milk Co., Charlottetown
" 31	" Cream ..	31171	Pool & Thompson, Montague Bridge.	"	"	" "
Aug. 6	" Milk....	31172	P. McNutt & Son, Malpeque....	"	"	" "
.....	....	31173	Jardine & Bernard, Kensington.	"	1.25	Henri Nestle, London.....
" 8	" Milk....	31174	Sanderson & Co., Charlottetown.	"	45	Charlottetown Condensed Milk Co.
			DISTRICT OF NEW BRUNSWICK—			
July 25	Canned Milk...	29524	Baird & Peters, Ward St., St. John, N. B.	3 tins.	45	Truro Condensed Milk Co,, Ltd., Truro, N.S.
"	" ...	29525	Dearborn & Co., Prince William St., St. John, N.B.	"	"	Canada Milk Condensing Co., Antigonish Co., N.S.
"	Canned Cream .	29526	W. A. Simonds, 89 Union St., St. John, N.B.	"	60	St. Charles Condensing Co., Ingersoll, Ont.
"	" Milk....	29527	The Geo. E. Barbour Co., Ltd., North Wharf., St. John, N.B.	"	36	Charlottetown Condensed Milk Co., Ltd., Charlottetown, P.E.I
Aug. 6	" Cream..	29528	Sussex Mercantile Co., Ltd., Sussex, Kings Co., N.B.	"	48	Truro Condensed Milk and Canning Co., Truro, N.S.
" 7	" " ..	29529	W. G. Bell, 314 Main St., Moncton, N.B.	"	54	The Charlottetown Condensed Milk Co., Ltd., Charlottetown, P.E.I.
" 9	" Milk....	29530	J. B. Snowball & Co., Ltd., Chatham, N.B.	"	45	Truro Condensed Milk Co., Ltd., Truro, N.S.
" 20	" " ...	29531	Inches & Grimmer, St. Stephen, N.B.	"	"	St. Charles Condensing Co., Ingersoll, Ont.
" 21	" " ...	29532	Geo. T. Whelpley Estate, Queen St,, Fredericton, N.B.	"	"	" "
" 23	" " ...	29533	W. S. Skillen, Main St., Woodstock, N.B.	"	"	Truro Condensed Milk Co., Truro, N.S.

AN THE LABORATORY OF THE INLAND REVENUE DEPARTMENT.

Inspector's Report.	Name of Brand.	Results of Analysis.							Remarks.
		Specific gravity at 15° C.	Water.	Total Solids.	Ash.	Fat.	Milk Sugar.	Loss to 500 c.cs. warm water.	
			p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	
R. J. WAUGH, INSPECTOR.									
"Reindeer Brand".....	Reindeer	1·2820	32·86	67·14	.....	8·32	.....	49·94	
"Good Luck Brand," Prepared at Ingersoll, Ont.	Good Luck	1·3080	30·00	70·00	.....	8·00	.....	53·07	
"Clover Brand," private mark, 2683.	Clover.....	1·3218	27·38	72·62	....	7·95	.....	55·55	
Labeled St. Charles, unsweetened, Evaporated Cream.	St. Charles.....	1·0787	71·56	28·43	1·24	6·75	11·49	.....	
"Victor Brand," Evaporated Cream.	Victor.....	1·081	70·33	29·67	1·65	7·70	11·15	.....	
T. MOORE INSPECTOR.									
"Lion Brand," guaranteed absolutely pure.	Lion	1·3080	32·65	67·35	.....	7·62	.....	49·25	
"Victor Brand," same as above, except Evaporated Cream instead of milk.	Victor	1·076	71·95	28·05	1·68	6·41	10·33	.....	
"Express Brand," same as above.	Express	1·3097	30·56	69·44	.....	7·92	.....	50·25	
Made with best cow's milk.	Nestle's Food...	Nestle	s' Mi	lk F	ood..	.....	.....	.....	Collected by mistake.
"Oak Brand," same as Lion Brand.	Oak	1·3072	27·73	72·27	.....	9·12	....	51·92	
J. C. FERGUSON, INSPECTOR.									
"Reindeer Brand," trade mark, Reindeer's Head.	Reindeer	1·3097	28·75	71·25	.....	8·25	.....	53·82	
"Owl Brand," Registered Trade Mark, Owl's Head, guaranteed pure; marks 8, 4, 4.	Owl.....	1·3192	30·25	69·75	.....	7·62	.....	50·60	
Trade Mark, Cow, &c. Stencil Mark N O Es +	St. Charles.... .	1·0670	74·99	25·01	1·37	7·44	10·61	.....	
"Express Brand," Train of Cars — Side, C. 58 on bottom of can, every can guaranteed.	Express	1·3046	32·05	67·95	.....	7·95	.....	50.00	
"Reindeer Brand," Trade Mark, Reindeer's Head, No. 731.	Reindeer Cream	1·0793	70·74	29·26	1·70	7·46	11·50	.....	
'Victor Brand," Guaranteed.	Victor	1·0817	70·36	29·64	1·60	7·69	12·18	....	
"Mayflower Brand." Guaranteed.	Mayflower.....	1·3105	29·03	70·97	.....	7·29	.....	52·27	
Condensed Milk, Trade Mark Registered (Cow) + 178. Purity.	Purity..	1·3043	30·58	69·42	.....	7·87	....	51·10	
Silver Cow, marks J. O. V +. Guaranteed.	Silver Cow	1·2970	33·83	66·17	....	7·35	....	49·37	
No. 2573 Clover Brand. Every can guaranteed.	Clover	1·3166	30 18	69·82	. ...	8·35	... .	51·37	

TABLE I.—RECORD OF FOOD SAMPLES OF CANNED MILK AND CREAM ANALYZED

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.
1907.						
			DISTRICT OF QUEBEC.—			
July 22	Canned Cream..	26254	S. Charles Delage, 368 St. Joseph	3 tins.	45	St. Charles Evaporated Cream.
" 22	" Milk....	26255	Moise Pouilot, 367 St. Joseph...	3 "	45	Reindeer Brand Condensed Milk.
" 22	" Cream..	26256	S. A. Chabot, 271 St. Joseph....	3 "	45	Borden's, Ingersoll, Ont...
" 22	" Milk....	26257	" "	3 "	45	Bordens Condensed Milk Co., N.Y.
" 22	" "	26258	" "	3 "	45	Reindeer Condensed Milk.
" 22	" Cream..	26259	Charles S. Riverin, 55 de la Couronne.	3 "	60	Bordens Peerless Cream...
" 22	" Milk....	26260	" " ..	3 "	45	Reindeer Condensed Milk.
" 22	" "	26261	" " ..	3 "	45	St. Charles Condensing Milk.
" 22	" "	26262	" " ..	3 "	45	Bordens Condensed Milk, N.Y.
" 22	" Cream..	26263	Myrand S. Pouilot, 70 de la Couronne.	3 "	60	Reindeer Cream. .....
" 22	" Milk....	26264	" " ..	3 "	30	Clover Condensed Milk...
" 22	" "	26265	" " ..	3 "	45	Reindeer Condensed Milk.
" 22	" "	26266	" " ..	3 "	45	Silver Cow Milk .....
" 22	" "	26267	" " ..	3 "	45	St. Charles Evaporated Cream.
" 23	" Cream..	26268	M. Boyce & Son, 21 Cote d'Abraham.	3 "	45	Jersey Cream Truro Condensed.
" 23	" " ..	26269	" " ..	3 "	45	St. Charles Evaporated Cream.
" 23	" " ..	26270	Isidore Voyer, 226 Richelieu	3 "	45	" " ..
" 23	" " ..	26271	M. W. Colman, 98 du Pont.	3 "	60	ReindeerEvaporated Cream
" 23	" " ..	26272	" "	3 "	60	Jersey Cream.....
" 23	" " ..	26273	O. Lacroix, 19 St. Joseph.	3 "	45	Bordens Peerless Evaporated Cream.

SESSIONAL PAPER No. 14

AT THE LABORATORY OF THE INLAND REVENUE DEPARTMENT—*Continued.*

Inspector's Report.	Name of Brand.	Results of Analysis.							Remarks.
		Specific gravity at 15° C.	Water.	Total Solids.	Ash.	Fat.	Milk Sugar.	Loss to 500 c.cs. warm water.	
			p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	
E. BELAND, INSPECTOR.									
.....	St. Charles.....	1·078	72·08	27·92	1·51	6·66	11·15	.....	
.....	Reindeer.	1·3280	25·88	74 12	.....	8·88	.....	56·74	
.....	Peerless	1·0730	74·36	25·64	1·68	5·70	10·74	.....	
.....	Challenge.....	1·3023	30·88	69·12	.....	7·60	.....	51·97	
.....	Reindeer.....	1·3236	26·84	73·16	.....	8·54	.....	54·58	
.....	Peerless.....	1·072	74·35	25·65	1·31	5·98	10·47	.....	
.....	Reindeer.....	1·3236	26·60	73·40	.....	8·52	.....	55·40	
.....	Silver Cow.....	1·3097	29·30	70·70	.....	7·75	.....	54·00	
.....	Gold Seal.	1·3105	29·95	70·05	.....	7·70	.....	51·92	
Badly decomposed	Reindeer Cream.	1·0820	74·03	25·97	1·23	6·94	10·81	.....	
.....	Clover.....	1·3166	28·65	71·35	.....	7·37	.....	54·32	
.....	Reindeer.	1·3315	25·36	74·64	.....	8·58	.....	56·32	
.....	Silver Cow.....	1·3105	25·58	71·42	.....	7·85	.....	51·52	
.....	St. Charles.....	1·081	70·70	29·30	1·20	7·20	11·36	.....	
No. on Box, 1354. ...	Jersey.	1·075	72·76	27·23	1·28	8·59	10·61	.....	
.....	St. Charles.. ...	1·0850	71·42	28·58	1·52	6·22	10·73	.....	
.....	"	1·074	73·08	26·93	1·47	6·58	10·61	.....	
No. on Box, 581	Reindeer Cream.	1·0811	71·00	29·00	1·74	7·34	11·70	....	
No. on Box, 1342. ...	Jersey.	1·074	75·15	24·85	1·60	8·05	11·08	.....	
.....	Peerless.	1·0820	70·32	29·68	1·62	7·91	11·43	.....	

TABLE I.—RECORD OF FOOD SAMPLES OF CANNED MILK AND CREAM ANALYZED

Date of Collection.	Nature of Sample.	No of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.
1907.						
			DISTRICT OF ST. HYACINTHE—			
Aug. 6	Canned milk....	91	MacRae Bros., Richmond	3 tins.	60	St. Charles Condensing Co., Ingersoll, Ont.
" 8	"	92	Kings' Mines' Stores, Thetford..	" .	36	Truro Condensed Milk Co., Huntingdon, Que., and Truro, N.S.
" 9	"	93	Woodman & McKee, Coaticook .	" .	54	G. Borden, New York, U. S. A.
" 22	"	94	E. Goyette, Cowansville	" .	45	Bordens Condensed Milk Co., Ingersoll, Ont.
" 27	"	95	W. Ducharme, Magog	" .	50	Charlottetown Condensed Milk Co., Ltd., Charlottetown.
			DISTRICT OF MONTREAL—			
July 23	Canned milk....	32801	W. H. Scroggie, Ltd., St. Catharine, West.	3 tins.	30	....
" 24	"	32802	H. Poirier, 27 St. Catharie, West	" .	36	....
" 24	Canned cream ..	32803	" " .	" .	45	. .....
" 24	Canned milk....	32804	Currie Bros., 113 Bleury	" .	45	....
" 24	" ...	32805	T. Elliott, 237 Bleury.....	" .	45	.. ..
" 24	"	32806	C. Spector, 18 Ontario, E	" .	45	....
" 24	"	32807	Raymond Freres, 395 St. Lawrence.	" .	45	....
" 25	"	32808	Laporte, Martin & Cie, Ltd., St. Peter A.	" .	32	.....
" 25	"	32899	" " ..	" .	35	.....
" 25	"	32810	" " ..	" .	27	.....
" 25	"	32811	" " ..	" .	35	Charlottetown C. M. Co..
" 25	"	32812	" " ..	" .	27	.....
Aug. 9	"	32813	Truro Condensed Milk Co., Huntingdon.	" .	45	....
" 9	"	32814	" " ..	" .	33	....
" 9	"	32815	" " ..	" .	39	... .

SESSIONAL PAPER No. 14

AT THE LABORATORY OF THE INLAND REVENUE DEPARTMENT—*Continued.*

Inspector's Report.	Name of Brand.	Results of Analysis.							Remarks.
		Specific gravity at 15° C.	Water.	Total Solids.	Ash.	Fat.	Milk Sugar.	Loss to 500 c.cs warm water.	
		p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	
J. C. ROULEAU, INSPECTOR.									
Sliver Cow Brand.....	Silver Cow.....	1·3097	28 65	71·35	.....	7·95	.....	53·55	
....	Clover	1·3097	28·40	71·60	.....	8·15	.....	50·65	
Tins stamped A.S.N.+ .	Eagle	1·3114	29·90	70·10	.....	8·00	.....	47·07	
.....	Gold Seal.....	1·3097	33·88	66·17	.....	7·90	.....	50·75	
.....	Oak	1·3037	29·35	70·65	.....	8·42	.....	53 10	
J. J. COSTIGAN, INSPECTOR.									
Strathcona Brand, marks A.S.Z.+.	Strathcona.....	1·2820	35·00	65·00	.....	8·32	.....	45·50	
Challenge Brand, M. L. O. +.	Challenge.....	1·3012	32·00	68·00	.....	7·20	.....	50·22	
St. Charles Brand	St. Charles.....	1·0776	70·70	29·34	1·74	7·50	10·67	.....	
Eagle Brand. N. I. N.+.	Eagle.	1·3158	31·13	68·87	... .	7·50	.....	50·57	
Reindeer Brand, 501....	Reindeer	1·3072	27·26	72·74	.....	8·34	.....	54·30	
Silver Cow Brand, S. O. V.+.	Silver Cow.....	1·3097	28·75	71·25	.....	7·40	.....	54·45	
Jersey Cream Brand, 408	Jersey	1·073	70·99	29·01	1·45	7·91	11·97	... .	
Gold Seal Brand, N. E. S.+.	Gold Seal.....	1·3023	31·18	68·82	.....	7·25	.....	50·80	
Owl Brand, 338.....	Owl.....	1·3448	26·70	73·30	.....	7·75	.....	55 05	
Good Luck Brand, S. N. J.+.	Good Luck.....	1·3046	30·63	69·37	.....	7·62	.....	52·70	
Export Brand	Export.....	1·3192	30·80	69·20	.....	8·75	.....	52·55	
Clover Brand, 587	Clover	1·3166	29·08	71·92	. ...	8·12	.....	54 10	
Reindeer Brand, 598. ..	Reindeer	1·3114	27·82	72·18	.....	8·60	.....	51·84	
Mayflower Brand, 599...	Mayflower.....	1·3097	30·38	69·62	.....	7·72	.....	52·10	
Jersey Cream Brand, 528	Jersey	1·076	74·39	25·61	1·52	7·94	11·15	.....	

TABLE I.—RECORD OF FOOD SAMPLES OF CANNED MILK AND CREAM ANALYZED

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.
1907.						
			DISTRICT OF OTTAWA—			
July 29	Canned milk....	34031	Medical Hall, Hull.....	3 tins.	60	National Drug and Chemical Co., Ottawa.
" 29	" ...	34032	"	3 " .	45	" " ..
" 29	" ...	34033	Modern Drug Store, Hull.	3 " .	55	Lyman Knox & Co., Montreal.
" 29	" ...	34034	"	3 " .	45	" " ..
" 29	" ...	34035	Thos. Payment, Ottawa....	3 " .	75	Ottawa Drug Co., Ottawa.
" 30	Canned cream ..	34036	F. A. Scott & Son, Ottawa	3 " .	60	Borden Condensed Milk Co.
" 30	" ..	34037	Bate and Co., Ottawa..	3 " .	38	H. N. Bate & Son.....
" 31	" ..	34038	"	3 " .	60	" .....
" 31	" ..	34039	A. L. Pinard, Ottawa...	3 " .	45	" .....
" 31	" ..	34040	T. Lindsay, Ltd., Ottawa.... ..	3 " .	38	The St. Charles Condensing Co., Ingersoll, Ont.
			DISTRICT OF KINGSTON—			
July 24	Canned milk....	32476	A. Glover, Earl St., Kingston...	3 tins.	45	Borden, Ingersoll, Ont....
" 24	" ...	32477	G. Mahood, Princess St., Kingston.	3 " .	60	" ....
" 24	" ...	32478	J. Reddin, Princess St., Kingston.	3 " .	60	" ....
" 24	" ...	32479	J. Crawford, Princess St., Kingston.	3 " .	60	Clover, Truro.... . .... .
" 24	" ...	32480	J. B. McLeod, Princess St., Kingston.	3 " .	1 00	Henri Nestle, Vevey, Switzerland.
" 24	" ...	32481	J. Kelly, Princess St., Kingston	3 " .	45	St. Charles, Ingersoll.....
" 26	" ...	32482	Wallbridge & Clark, Belleville Front.	3 " .	45	Borden, Ingersoll, Ont ....
" 26	" ...	32483	J. R. Harvey & Son, King St., Cobourg.	3 " .	60	" ....
" 26	" ...	32484	" " ..	3 " .	45	Clover Brand, Truro .....
" 26	" ...	32485	A. J. Gould, King St., Cobourg.	3 " .	45	St. Charles, Ingersoll.....

SESSIONAL PAPER No. 14

AT THE LABORATORY OF THE INLAND REVENUE DEPARTMENT—*Continued.*

Inspector's Report.	Name of Brand.	Result of Analysis.							Remarks.
		Specific gravity at 15° C.	Water.	Total Solids.	Ash.	Fat.	Milk Sugar.	Loss to 50° c.cs. warm water.	
			p. c.	p. c.	p. c.	p. c.	p. c.		
J. A. RICKEY, INSPECTOR.									
Nestle Brand. Mark ×	Nestles.....	1·2879	35·28	64·72	.....	7·12	.....	47·92	Milk was not in good condition.
Truro Condensed Milk Co., Truro, N.S., 449.	Reindeer... . ..	1·3114	26·50	73·50	. ..	8·16	.....	53·24	
Eagle Brand, Borden Cond. Milk Co., N.Y. A O A +	Eagle	1·3029	31·40	68·60	.....	8·25	....	49·95	
Reindeer Brand, Truro Cond. Milk Co., N.S., 449.	Reindeer.. ..	1·3149	28·00	72·00	.....	9.80	....	51·00	
Borden Cond. Milk Co., Ingersoll. L O O +	Gold Seal... .	1·2945	33·65	66·35	.....	7·35	.....	49·60	
Peerless Brand. S C T V +	Peerless	1·0707	69·96	30·04	1·70	6·94	12·45	.....	
St. Charles Brand. St. Charles Cond. Co., Ingersoll. S E T T +	St. Charles	1·082	71·94	28·06	1·69	7·18	11·15	.....	
Reindeer Brand. Truro Cond. Milk and Canning Co., Truro, N.S. 994.	Reindeer Cream.	1·0811	70·89	29·11	1·78	7·04	11·70	.....	
Truro Cond. Co. Cut of cow on front of tin, 187.	Jersey	1·0793	69·97	30·03	1·52	8·20	11·63	.....	
Cut of cow in gold on front of tin. N E O A +	St. Charles.. ...	1 070	74·14	25·86	1·03	8·49	11·29	....	
J. HOGAN, INSPECTOR.									
Eagle Brand..	Eagle	1·2945	31·10	68·90	.....	8·32	.....	49·77	
"	"	1·3114	33·95	66·05	.....	7·75	... .	48·92	
"	"	1·3112	30·88	69·12	.....	8·75	....	50·57	
.....	Clover.....	1·3166	27·50	72·50	.....	7·87	...	54·87	
... .	Nestles.	1·3029	29·20	70·80	.....	8·12	.....	51·50	
.....	Silver Cow	1·3080	29·25	70·75	.....	7·50	.....	53·52	
.....	Eagle	1·3037	29·49	70·51	.....	7·82	.....	49·77	
....	"	1·3037	33·43	66·57	.....	7·87	.....	47·20	
Clover Brand.....	Clover.....	1·3218	26·75	73·25	.....	8·00	.....	55·25	
.....	Silver Cow	1·3149	27·38	72·62	.....	8·22	.....	54·02	

TABLE I.—RECORD OF FOOD SAMPLES OF CANNED MILK AND CREAM ANALYZED

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.
1907.						
			DISTRICT OF TORONTO—			
Aug. 9	Canned milk....	33331	Gibbons Bros., 742 Queen St. East, Toronto.	3 tins.	45	Truro Condensed Milk Co., Ltd., Truro, N.S.
" 9	Canned cream ..	33332	W. J. McCullough, West Toronto Junction.	3 " .	45	St. Charles Cond. Co., Branch Factory, Ingersoll, Ont.
" 12	Canned milk....	33333	Jno. O. Carpenter, 10 Market Square, Hamilton.	3 " .	30	Borden's Condensed Milk Co., Branch Factory, Ingersoll, Ont.
" 12	" ...	33334	Peters & Bonnsall, 347 Barton St. East, Hamilton.	3 " .	30	St. Charles Condensing Co., Branch Factory, Ingersoll, Ont.
" 15	" ...	33335	F. A. Wilson, 33 Queen St., St. Catherines.	3 " .	38	" " ..
" 15	" ...	33336	J. T. Festing, 11 St. Paul St., St. Catherines.	3 " .	30	Truro Condensed Milk Co., Truro, N.S.
" 19	" ...	33337	Lisson & Co., Niagara Falls.....	3 " .	60	Borden's Condensed Milk Co., Branch Factory, Ingersoll, Ont.
" 21	Canned cream ..	33338	F. Guay, 318 Queen St. West, Toronto.	3 " .	45	" " ..
" 21	Canned milk....	33339	John Butcher, 300 Queen St. West, Toronto.	3 " .	23	Wills' United Dairies, made in England.
" 21	Canned cream ..	33340	Robt. Simpson Co., Ltd., Cor. Yonge and Queen Sts., Toronto	3 " .	38	Prepared especially for Eby, Blain & Co., Ltd., Toronto, Sole Agents.
			DISTRICT OF LONDON—			
July 26	Canned milk....	30378	Chas. Nairns, Goderich	3 tins.	45	Borden Condensed Co.....
" 27	" ...	30381	Cardino Bros., Seaforth.....	3 " .	45	A. M. Smith & Co., London
" 29	" ...	30384	A. Beattie & Co., Stratford.....	3 " .	45	James Lumbers, Toronto..
" 29	Canned cream ..	30389	J. M. Adam, St. Marys..... ...	3 " .	45	A. M. Smith & Co., London
" 30	Canned milk....	30392	Homer Robertson, Sarnia.....	3 " .	75	Lyman Bros., Toronto ....
" 31	" ...	30399	G. Wiueno, Sarnia..... . .	2 " .	30	Vendor who bought from manufacturer in Truro, N.S.
Aug. 7	Canned cream ..	30404	Hugh Malcomson, Chatham....	3 " .	45	Vendor..... .....
			DISTRICT OF MANITOBA—			
Aug. 7	Canned cream ..	25628	Hudson Bay Co., Winnipeg.....	3 tins.	60	Stones Sons, London, Eng.
" 7	" ...	25629	" "	3 " .	45	The Truro Cond. Milk Co., Truro, N.S.
" 7	Canned milk....	25630	" "	3 " .	45	St. Charles Cond. Co., St. Charles, Ill., U.S.A.

SESSIONAL PAPER No. 14

AT THE LABORATORY OF THE INLAND REVENUE DEPARTMENT—*Continued.*

Inspector's Report.	Name of Brand.	Results of Analysis.							Remarks.
		Specific Gravity at 15° C.	Water.	Total Solids.	Ash.	Fat.	Milk Sugar.	Loss to 500c. cs. warm water.	
		p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	
H. J. DAGER, INSPECTOR.									
Reindeer Brand 376	Reindeer.	1·3183	26·80	73·20	... .	8·91	.....	54·75	
....	St. Charles	1·075	75·64	24·36	1·39	7·48	9·45	.....	
Challenge Brand, S S V +	Challenge.....	1·3097	30·43	69·57	.....	7·32	.....	52·85	
Good Luck Brand, L J N +	Good Luck.....	1·3097	32·30	67·70	.....	7·65	.....	53·25	
Silver Cow Brand, A T T +	Silver Cow	1·3012	30·88	69·12	.....	7·35	.....	51·87	
Clover Brand 507.	Clover	1·3272	28·55	71·45	. ..	8·00	.....	56·50	
Eagle Brand, N J N +	Eagle.....	1·3105	34·33	65·67	.....	7·60	.....	48·87	
Peerless Brand, N O T E +	Peerless	1·0701	74·35	25·65	1·40	6·13	10·61	.....	
Diploma Brand.....	Diploma..	1·3192	26·93	73·07	.....	8·92	.....	53·80	
Anchor Brand, N J N L +	Anchor.....	1·070	74·45	25·55	1·08	6·51	10·47	.....	
T. KIDD, INSPECTOR.									
Eagle Brand..... ..	Eagle	1·3037	29·55	70·45	.....	8·67	.....	51·65	
....	St. Charles	1·0846	68·92	31 08	1·72	7·63	13·10	.....	
Made in St. Charles, Ill.	Silver Cow.....	1·3192	27·05	72·95	.....	7·72	.....	55·82	
Made by St. Charles Co., Ingersoll, Ont.	St. Charles	1·075	75·52	24·48	1·60	7·16	10·62	.....	
Borden Cond. Milk Co., New York, U.S.A.	Eagle	1·3114	30·45	69·55	.....	7·87	.....	51 07	
Reindeer Brand	Reindeer.	1·3245	25·64	74·36	.....	8·44	....	55·40	
Peerless Brand, Ingersoll, Ont.	Peerless.....	1·0748	73·51	26 49	1·38	6·18	11·43	.....	
A. C. LARIVIERE, INSPECTOR.									
....	Gold Reef.....	0·987	68·06	31·94	0·40	25·20	4·79	.....	
....	Jersey	1·0760	72·07	27·93	1·50	7·47	11·56	.....	
....	Silver Cow.....	1·3097	31·58	68·42	.....	7·55	.....	51·27	

TABLE I.—RECORD OF FOOD SAMPLES OF CANNED MILK AND CREAM ANALYZED

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.
1907.						
			DISTRICT OF MANITOBA.—			
Aug. 7	Canned Milk..	25631	Hudson Bay Co., Winnipeg.....	3 tins.	45	Charlottetown Cond. Milk Co., Charlottetown, P.E.I.
" 7	" "	25632	" "	3 "	60	Henri Nestle, Vevy, Switzerland.
" 7	" "	25633	" " . ..	3 "	45	Bordens Cond. Milk Co., New York.
" 7	" "	25634	" "	3 "	45	Truro Cond. Milk Co., Truro, N.S.
" 8	" " ...	25642	J. Robinson Co., Winnipeg.....	3 "	40	St. Charles Cond. Co., St. Charles, Ill., U.S.A. and Ingersoll, Ont.
" 8	Canned Cream..	25643	" "	3 "	45	Bordens Cond. Milk Co., N.Y.
" 9	" Milk..	25644	Campbell Bros. & Wilson, Winnipeg.	3 "	35	Charlottetown Cond. Milk Co., Charlottetown, P.E.I.
" 9	" "	25645	Sutherland Bros., Winnipeg.....	3 "	45	" " ..
" 9	" Cream..	25646	T. J. Davis, Winnipeg.....	3 "	45	Bordens Cond. Milk Co., N.Y.
" 9	" Milk..	25647	" "	3 "	35	Charlottetown Cond. Milk Co., Charlottetown, P.E.I.
" 9	" "	25648	" "	3 "	35	Bordens Cond. Milk Co., New York, U.S.A.
" 9	" Cream..	25649	Laurie Bros.....	3 "	40	Truro Cond. Milk Co., Truro, N.S.
			DISTRICT OF CALGARY.—			
Aug. 17	Canned Milk..	28766	L. B. Cochran, Medicine Hat...	3 tins.	50	Truro Cond. Milk Co., Truro, N.S.
" 17	" Cream..	28767	" " . ..	3 "	45	St. Charles Cond. Co., St. Charles, Ill.
" 17	" Milk..	28768	Leonard & Harris, Medicine Hat	3 "	50	Truro Cond. Milk Co., Truro, N.S.
" 17	" Cream..	28769	" " ..	3 "	50	Bordens Cond. Milk Co., Ingersoll, Ont.
" 29	" Milk..	28770	Revillon Bros., Edmonton.....	3 "	50	Truro Cond. Milk Co., Truro, N.S.
" 29	" Cream..	28771	" " . ..	3 "	50	St. Charles Cond. Co., St. Charles, Ill.
" 29	" Milk ...	28772	The Acme Co., Ltd., Edmonton.	3 "	50	Truro Cond. Milk Co., Truro, N.S.
" 29	" "	28773	" " ..	3 "	50	Borden Cond. Milk Co., N.Y.
" 29	" Cream..	28774	" " ..	3 "	50	St. Charles Cond. Co., St. Charles, Ill.
" 29	Canned milk....	28775	A. McDonald, Edmonton.....	3 tins.	50	Charlottetown Milk Co., Ltd., P.E.I.
" 29	Canned cream ..	28776	"	3 " .	50	Borden Cond Milk Co., Ltd., New York, U.S.A.
" 29	Canned milk....	28777	"	3 " .	50	St. Charles Cond. Co., Ltd., St. Charles, Ill.

SESSIONAL PAPER No. 14

AT THE LABORATORY OF THE INLAND REVENUE DEPARTMENT—*Continued.*

Inspector's Report.	Name of Brand.	Results of Analysis.							Remarks.
		Specific gravity at 15° C.	Water.	Total Solids.	Ash.	Fat.	Milk Sugar.	Loss to 500 c.cs. warm water.	
			p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	
A. C. LARIVIERE, INSPECTOR—*Continued.*									
....	Oak	1·3037	29·43	70·57	.....	8·75	.....	52·00	
.....	Nestles.	1·3166	30·48	69·52	.....	8·38	.....	49.62	
Prepared at Ingersoll, Ont.	Gold Seal.....	1·3080	30·90	69·10	.....	7·20	.....	51·47	
....	Reindeer..	1·3192	27·60	72·40	.. .	8·40	....	54·20	
..... .	Good Luck. ...	1·3080	29·73	70 27	....	7·65	.....	53·20	
.....	Peerless	1·0758	72·54	27·46	1·62	6·35	10·26	.....	
... .	Export	1·3245	29·73	70·27	.....	8·25	.....	50·07	
....	"	1·3184	30·88	69·12	.....	7·70	.....	50·57	
....	Peerless	1·0782	71·48	27·46	1·62	6·35	10·26	.....	
.....	Oak	1·3105	28·16	71·84	.....	8·00	... .	54·05	
Prepared at Ingersoll, Ont.	Gold Seal.....	1·3210	28·95	71·05	.....	7·35	.....	51·35	
....	Jersey..	1·070	71·30	28·70	1·49	8·59	11·15	.....	
R. W. FLETCHER, INSPECTOR.									
....	Reindeer.	1·3166	28·36	71·64	.....	8·30	.....	54·04	
....	St. Charles	1·072	74·90	25·10	1·08	6·64	9·92	.....	
....	Reindeer.	1·3072	28·04	71·96	.....	8·70	.....	54·10	
.....	Peerless	1·0741	72·76	27·23	1·50	6·65	10·61	.....	
....	Reindeer.	1·3166	27·36	72·64	....	8·58	.....	55·10	
....	St. Charles.	1·070	74·78	25·23	1·15	6·95	9·34	.....	
....	Reindeer.	1·3072	26·84	73·06	....	8·90	....	55·10	
.....	Gold Seal.....	1 3097	29·65	70·35	.....	7·60	... .	51·80	
.....	St. Charles.	1·073	74·63	25·37	1·30	6·23	10·26	.....	
.. ..	Oak.....	1·3080	29·30	70·70	.....	8·57	.....	52·87	
....	Peerless	1·067	74·38	25·63	1·45	6·40	10·13	... .	
....	Silver Cow	1·3023	31·00	69·00	.....	7·45	.....	52·05	

TABLE I.—RECORD OF FOOD SAMPLES OF CANNED MILK AND CREAM ANALYZED

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.
1907.						
			DISTRICT OF CALGARY—*Con.*—R. W			
Aug. 29	" ...	28778	A. McDonald, Edmonton	3 " .	50	Truro Cond. Milk Co., Truro, N.S.
" 29	" ...	28779	"	3 " .	50	Borden's Cond. Milk Co., Ltd., New York.
" 29	" ...	28780	R. McKenzie & Co., Edmonton .	3 " .	50	" " ..
			DISTRICT OF BRITISH COLUMBIA—			
Aug. 1	Canned milk	32162	West End Grocery, New Westminster, B.C.	3 tins.	40	Borden's Cond. Milk Co., Ingersoll, Ont.
" 1	" ...	32163	C. S. Hoffard, New Westminster, B.C.	3 " .	40	Truro Cond. Milk Co., Ltd., Truro, N.S.
" 2	" ...	32164	J. Wells & Co., Pender St., Vancouver.	3 " .	30	Charlottetown Cond. Milk Co., Ltd., Charlottetown, P.E.I.
" 15	" ...	32165	L. Rubinowitz, Steveston, B.C..	3 " .	45	Canada Milk Cond. Co., Antigonish, N.S.
" 15	" ...	32166	Marshall Smith, Ladner, B.C ...	3 " .	40	The Dahl Milk Co., Norway.
" 16	" ...	32167	Currie & McWilliams, Westham Island, Fraser River.	3 " .	45	Borden's Cond. Milk Co., Ingersoll, Ont.
" 16	" ...	32168	Paul Swanson, B.N.A. Cannery, Westham Island, Fraser River.	3 " .	45	Truro Cond. Milk Co., Ltd., Truro., N.S.
" 16	" ...	32169	B.C. Packers Assoc., Canning, Canoe Pass, Fraser River.	3 " .	45	Canada Milk Cond. Co., Antigonish, N.S.
" 17	" ...	32170	Kyle & Son, Granville St., Vancouver, B.C.	3 " .	40	Charlottetown Cond. Milk Co., Ltd., Charlottetown, P.E.I.
" 17	" ...	32171	S. F. McCready, Granville St., Vancouver, B.C.	3 " .	45	Borden's Cond. Milk Co., Ingersoll, Ont.
" 1	Canned cream...	32172	West End Grocery, New Westminster, B.C.	3 " .	45	Pacific Coast Cond. Milk Co., Seattle, Wash.
" 1	" ...	32173	C. E. Hoffard, New Westminster, B.C.	3 " .	45	Truro Cond. Milk Co., Truro, N.S.
" 15	" ...	32174	E. Hunt, Steveston, B.C.....	3 " .	40	St. Charles Cond. Co., Ingersoll, Ont.
" 19	" ..	32175	Deal's Grocery, Cordova St., Vancouver.	3 " .	30	Charlottetown Cond. Milk Co., Ltd., Charlottetown, P.E.I.
" 19	Canned milk	32176	Webster Bros., Granville St., Vancouver.	3 " .	30	Truro Cond. Milk Co., Ltd., Truro, N.S.

SESSIONAL PAPER No. 14

AT THE LABORATORY OF THE INLAND REVENUE DEPARTMENT—*Continued.*

Inspector's Report.	Name of Brand.	Result of Analysis.							Remarks.
		Specific gravity at 15° C.	Water.	Total Solids.	Ash.	Fat.	Milk Sugar.	Loss to 500 c.cs. warm water.	
			p. c.	p. c.	p. c.	p. c.	p. c.		
FLETCHER, INSPECTOR—*Continued.*									
....	Reindeer.... ...	1·3236	26·16	73·84	.....	8·94	.....	55·82	
... .	Gold Seal.....	1·3080	31·28	68 72	.....	7·25	.....	51·47	
.....	Gold Seal.....	1·3166	30·25	69·75	.....	7·35	.....	.....	
	Peerless	1·0750	74·17	25·83	1·54	6·93	10·40	.....	
R. B. PARKINSON, INSPECTOR.									
Gold Seal Brand, N J L +	Gold Seal.	1·3072	29·98	70·02	.....	7 50	.....	51·97	
Reindeer Brand, 2719...	Reindeer.... ..	1·3166	27·68	72·32	.....	8·52	.....	54·92	
Empire Brand, 785.....	Empire.....	1·3070	29·18	70·82	....	8·55	.....	52·05	
Pheasant Brand.....	Pheasant..	1·3218	30·84	69·16	1·86	5·32	8·14	.....	Casein, &c., 8·24. Cane sugar by diff., 45·60.
No. on tin T 832.....	Dahl's.....	1·0325	83·34	11·66	0·70	2·50	6·77	.....	
Gold Seal Brand. N J O +	Gold Seal.....	1·3105	30 05	69·95	.....	7·25	.....	48·70	
Reindeer Brand, 2722...	Reindeer.....	1·3236	26·82	73·18	.....	8·60	.....	55·62	
Pheasant Brand.....	Pheasant.....	1·3131	32·58	67·42	1·86	4·87	7·73	.....	Casein, &c., 8·34. Cane sugar by diff., 44·62.
Oak Brand, 63.....	Oak..... ...	1·2978	30·65	69·35	.....	8·20	....	47.30	
Eagle Brand. N E A +	Eagle	1·3029	31·95	68·05	....	7·57	.....	50·25	
Carnation Brand, 763 5.	Carnation	1·0650	75·05	24·95	1·20	6 93	10·13	.....	
Jersey Brand, 1685	Jersey.....	1·083	69·66	30 34	1·22	7·92	10·81	.....	
St. Charles Brand. S V L L +	St. Charles.....	1·071	72·04	27·96	1·35	7·48	10·47	.....	
Victor Brand, 452	Victor.....	1·079	70·25	29·75	1·75	7·90	10·95	. ...	
Clover Brand, 2018	Clover.....	1·3114	28·45	71·55	.....	8·40	....	52·20	

APPENDIX K.

BULLETIN No. 145—STRAINED HONEY

OTTAWA, January 13, 1908.

W. J. GERALD, Esq,
Deputy Minister of Inland Revenue.

SIR,—I beg to enclose you a Report on 253 samples of so-called *Strained Honey* collected throughout the Dominion in April and May, 1907.

The following synoptical Table gives particulars of collection, and a classification based upon the results of analysis :—

Inspectoral District.	Genuine.		Doubtful.	Apparently adulterated.	Sold as Compound.	Total.
	Normal.	High Water Content.				
Nova Scotia	12	8	0	0	0	20
Prince Edward Island	5	5	0	3	0	13
New Brunswick	17	0	3	0	0	20
Quebec	17	0	1	2	0	20
St. Hyacinthe	14	5	0	0	1	20
Montreal	13	1	0	1	5	20
Ottawa	10	2	0	*1	7	20
Kingston	20	0	0	0	0	20
Toronto	17	1	0	2	0	20
London	17	1	0	2	0	20
Manitoba	14	2	0	3	1	20
Calgary	14	5	0	1	0	20
British Columbia	18	1	0	1	0	20
	188	31	4	16	14	253

All other necessary information, of a technical kind, will be found in the accompanying Memorandum.

The results of analysis are presented in the form of two Tables. Table I gives information regarding the source and general character of the samples, as well as the results of a preliminary analysis. Table II gives more detailed analytical work, performed upon samples which appeared doubtful, or unsatisfactory, on preliminary testing.

A further collection of Honey has been ordered, in consequence of a resolution of the Middlesex Beekeepers' Association. The work of analysis is already in progress, and a report will be made at the earliest possible date.

I beg to recommend publication of this Report, as Bulletin No. 145.

I have the honour to be, Sir,
Your obedient servant,

A. McGILL,
Chief Analyst.

* The strip of paper, answering the purpose of a label, is so badly mutilated in this sample, as to make it possible that the word "Compound" in small letters, may have been originally on the package, as I find it on some very similar packages.

MEMORANDUM.

Honey is, in its nature, of somewhat variable character; being influenced by the special plants from which it is gathered; by the presence of "honey-dew" (1); by accessibility to the bees of maple or other sweet sap; by the weather, and other causes.

In order to define Honey, it becomes necessary to study the extent of this variability.

For Canada, no legal definition of Honey exists. The following definition was made legal for the United States on the 26 June, 1906:—"Honey is the nectar, and saccharine exudations of plants, gathered, modified and stored in the comb by honey bees (Apis Mellifica and Apis Dorsata); is laevorotatory, contains not more than twenty-five (25) per cent. of water, not more than twenty-five hundredths (0·25) per cent of ash, and not more than eight (8) per cent. of sucrose."

With regard to this definition it may be said that occasional samples of genuine honey have been found to give a right hand rotation. The number expressing such rotation is always very small; and the samples in question are of such rare occurrence as to be practically negligible. The fact, however, that they may occur, makes it impossible to charge adulteration against a producer having such samples in his possession. It need not, however, prevent dextrorotatory samples from being described as *below standard:* or even, as being "*non-honey*" under the Act.

The inspection of 183 samples in 1897, showed 47 to contain above 25 per cent. of water. (2) Of this number 7 were adulterated or doubtful on other accounts; leaving 40 (=23 per cent. of those classed as apparently genuine) with above 25 per cent water. But as explained by the Chief Analyst, "the analysts did not follow a uniform process" in the estimation of water.

The inspection of 99 samples in 1903, showed 8 samples to contain above 25 per cent water, of which number 6 were adulterated or doubtful, on other grounds. This leaves 2 samples (=2½ per cent of the number classed as apparently genuine) to contain above 25 per cent. water.

The inspection of 54 samples, in 1906, shewed 5 to contain above 25 per cent. water Of this number, 2 are otherwise adulterated; leaving 3 samples (=7 per cent. of those classed as apparently genuine) to contain above 25 per cent. water.

The inspection of 253 samples, now reported, shows 49 samples with 25 per cent. or more of water. Of this number, eleven (11) are sold as "compounds," and 7 are classed as adulterated or doubtful, on independent grounds. This leaves 31 samples (=14 per cent. of the number classed as presumably genuine) to contain 25 per cent of water, or more than this. The highest amount of water found in any of these samples is 31·4 per cent. It is noteworthy that a sample of guaranteed honey, supplied by Mr. R. F. Holterman of Brantford, Ont., in 1897 contained 27·1 per cent. of water. See Bull. No. 47).

The ash of honey is due almost entirely to the accidental occurrence of dust, which sticks to the nectar, or other saccharine fluid, gathered by the bees. It is usually a mere trace; but exceptional instances are on record, when it has reached 0·3 of one per cent.

Many samples are recorded in Bulletin No. 47, which give a higher ash than this; but as every test indicated their genuineness, the high ash can only be interpreted as due to carelessness in handling the article, with consequent access of dust. The sub-

(1) Honey-dew is a sweet exudation which appears on the leaves of some plants, and especially of conifers, when stung by an aphis.

(2) Nearly all genuine samples of honey approximate 20 per cent. of water; and the number of samples falling below 18 per cent. or above 22 per cent. of water, is small indeed. This constancy of moisture content is due to the fact that bees find it impossible to deal with the substance if too dry or too wet. The definition quoted above, is amply liberal so far as water content of hon ey is concerned.

stances employed to adulterate honey are, like honey itself, characterized by a very low ash content. Owing to the valuelessness of this determination for purposes of detecting adulteration, I have not considered it necessary to carry out the test on the present collection.

Very few articles of food have been more extensively adulterated than honey; and it is important to examine how far the above definition of (U.S.) legal honey, enables surrogate samples to be detected.

Bees naturally gather the raw material for honey production at the nearest point; and this has been taken advantage of by bee-keepers. Sugar, syrup and other foods, are very properly fed to bees, in order to tide over periods of scarcity; but the feeding of syrup to bees to enable them to fill their combs with honey for the market, is another matter. Even when bees are fed exclusively on cane sugar (sucrose), the honey which they store up, consists chiefly of invert sugar, the organization of the insect effecting the change. But notable amounts of the cane sugar so fed, escape inversion; and as much as 30 per cent of the whole has been found, as unchanged sucrose, in the resultant honey. When bees have access to the normal, raw-material for honey making, it is well established that the honey will contain not more than from traces, to 10 per cent of cane sugar (sucrose). In the event of coniferous trees (pines &c.) being largely accessible, the honey may contain slightly higher amounts of cane sugar; but even in such case, 15 or 16 per cent of sucrose is a maximum amount. The Swiss Agricultural Chemists have fixed the maximum at 16 per cent. In northern climes, where the pine and other coniferous trees abound, it may be safer to fix a somewhat higher maximum for sucrose than 8 per cent as established by the United States standard already quoted.

I have, for purposes of this Bulletin, adopted 16 per cent sucrose.

Glucose (Corn syrup) is a frequent adulterant of *extracted* or *strained* honey, i.e. honey which has been separated from the comb. Such surrogate honey always shows a marked right-hand rotation; and, by this means, (and others) is readily detected.

Cane sugar syrup is less often employed, as a honey substitute,, partly because of its higher cost, and partly because of its ready detection, if employed in profitable amounts. There can, however, be no doubt that cane sugar syrup is in use, as an adulterant to honey. One of the samples now reported (See No. 25812) contains an explicit statement of the fact, that it consists of "*Honey and Sugar Syrup.*" This sample gives a reading +17·8°. The addition of cane syrup as already remarked, to the finished product, is not difficult of detection. This becomes quite otherwise when it is fed to the bees and subjected to the influence of the organism of the bee itself. There is a strong presumption against the purity of any honey sample which contains 10 per cent or more of cane sugar; but owing to circumstances already described, I consider it advisable, for the present, to give the benefit of any doubt, to the producer, and to permit samples, up to 16 per cent of cane sugar, to pass as "presumably genuine," in the absence of other evidence against them.

When cane sugar in solution is inverted (as by an acid) the resultant "*invert sugar*" is practically identical with honey, so far as the sugar content of the latter is concerned. Particulars as to the use of invert sugar as a honey substitute, or adulterant, will be found in the introduction to Bull. No. 90.

TABLE II.—SPECIAL EXAMINATION OF CERTAIN HONEY SAMPLES.

No.	CLERGET.			Cane Sugar.	FEHLING WORK REDUCING SUGAR.			Cane Sugar.	Opinion of the Chief Analyst.
	Direct.	Invert.	Diffce.		Before Immersion.	After Immersion.	Diffce.		
47	− 12·2	−13·6	1·40	1·04	68·44	70·19	1·75	1·66	
57	− 13·0	−18·9	5·9	4·40	73·88	77·39	3·51	3·33	
24391	+ 2·3	−19·36	21·66	16 20	59·70	76·22	16·52	15·69	Doubtful.
25812	+ 17·4	−22·88	40·28	30·06	49·97	83·99	34·02	32·31	Sold as mixture.
25827	+ 15·0	−24·2	39·2	29·25	46·08	79·52	33·44	31·77	Adulterated.
25836	+ 14·0	−22·33	36·33	27 11	47 63	79·13	31·50	29·92	"
25838	+ 19·2	−23·1	42·30	31·56	44·13	77·58	33·45	31·77	"
25845	− 15·2	−22·0	66·80	5·07	71·26	74·66	3·40	3·23	
26186	+ 3·2	+17·82	14·62	15·70	65·04	83·41	18·37	17·45	Adulterated.
26204	+ 22·5	−20·35	42·85	32·00	47·73	82·05	34·32	32·60	"
26241	+ 21·4	+11·00	10·40	7·70	62·41	70·19	7·78	7·40	Doubtful.
27322	− 11·5	−17·6	6·10	4·55	64·84	70·19	5·35	5·08	
27326	− 11·8	−17 6	5·80	4·32	65·81	73·3	7·49	7·12	
27331	− 10·0	−14·0	4·00	2·98	67·66	70·88	2·92	2·77	
27335	− 2·9	−17·6	14·70	10·95	61·25	73·88	12·63	11·98	
27337	− 15·0	−18·7	3·70	2·70	66·88	70·19	3·31	3·14	
27340	− 3·2	− 8·8	5·60	4·18	62·60	64·75	2·15	2·04	
28721	− 18·0	−22·0	4·00	2·98	69·02	73·10	4·08	3·87	
28726	− 2·7	−20·9	18·20	17·61	61·05	77·38	16·33	15·50	Adulterated.
28737	− 14·8	−20·9	6·10	4·55	75·05	78·16	3·11	2·95	
28738	− 10·6	−15·8	5·20	3·88	71·16	76·22	5·06	4 80	
28740	− 17·0	−22·0	5·00	3·73	68·73	71·35	2·62	2·49	
29512	+ 13·0	+ 3·08	9·92	7·40	66 50	74·27	7·77	7·38	Doubtful.
29514	+ 4·4	− 2·75	7·15	5·33	68·54	71·94	3·40	3·23	Presumably genuine.
30352	+ 9·3	−17·05	26·35	19·66	55·90	79·33	23·43	22·25	Adulterated.
30360	+ 18·8	−21·12	39·92	29·79	47·83	79·91	32·08	30·47	"
31102	− 14·1	−16·9	2·80	1·86	65·81	67·66	1·85	1·75	
31103	− 5·1	−15·4	10·30	7·68	70·48	77·19	6·71	6·37	
31104	− 2·5	−17·2	14·70	10·97	61·25	72·91	11·66	11·07	
31106	− 12·1	−16·5	4·40	3 28	68·44	72·91	4·47	4·24	
31108	− 7·1	−16·0	8·90	6·64	70·77	77·03	6·26	5·95	
31116	+ 48·6	+45·43	3·17	2·36	62·90	66·50	3·60	3·42	Adulterated.
31117	+ 41·9	+37·18	4·72	3·52	61·92	65·33	3·41	3·23	"
31118	+ 78·0	+58 96	19·04	14·20	45·88	61·63	15·75	14·96	"
31687	+ 46·5	+34·1	12·40	9·25	60·76	68·83	8 07	7·66	"
32036	− 18·2	−22·5	4·30	3·21	67·95	73·69	5·74	5·45	
32054	+ 86·5	+75 9	10·60	7·90	53·76	61·83	8·07	7·66	Adulterated.
32203	+114·0	+92·4	21·60	16·12	38·49	54·63	16·14	15·33	Sold as Compound.
32207	+ 96·6	+94·6	2·00	1·49	52·20	53·47	1·27	1·20	Adulterated.
32208	+ 95·0	+90·75	4·25	3·17	54·54	58·13	3·59	3·41	Sold as Compound.
32214	− 15·0	−18·7	3·70	2·76	71·65	73·30	1·65	1·57	
33206	+ 13·5	−17·38	30·88	23·04	54·34	78·56	24·22	23·00	Adulterated.
33208	+ 20·0	−18·7	38·70	28·88	48 61	78·94	30·33	28·81	"
33220	− 13·0	−19·5	6·50	4·85	76·41	79·72	3·31	3·14	

TABLE I—RECORD OF FOOD SAMPLES, HONEY, ANALYZED BY

Date of Collection.	Nature of Sample	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.
1907						
			DISTRICT OF NOVA SCOTIA—			
April 18	Honey.....	27321	Larder, Hubley & Co., Halifax.	3 bot..	30	Chas. Piers, Halifax.....
"	"	27322	Brown Bros. & Co., Halifax...	" ..	45	Nat. Drug and Chem. Co., Halifax, N.S.
"	"	27323	F. J. Clork, Halifax	" ..	60	Leonard Hill, Port Williams, N.S..
"	"	27324	J. A. Leaman & Co., Halifax..	1 jar...	25	" "
April 19	"	27325	H. A. Taylor, Halifax	18 oz...	35	Fawcett Honey Co., Memramcook, N.B.
"	"	27326	E. S. Blackie, Halifax	" ...	35	Nat. Drug and Chem. Co., Halifax.
"	"	27327	G. A. Burdige, Halifax.... ..	16 oz....	25	Fawcett Honey Co., Memramcook, N.B.
"	"	27328	W. E. Crowe & Co., Halifax...	2 bot..	40	" "
"	"	27329	C. E. Choat & Co., Halifax....	3 " ..	60	Leonard Hill, Port Williams, N.S.
April 23	"	27330	Leonard Hill, Port Williams, N.S.	16 oz....	25	Vendor.
" 24	"	27331	Murphy & DeMont, Windsor, N.S.	1 pt....	50	John Porter, Lochartville, N.S.
"	"	27332	H. Wilson, Windsor, N.S.....	1 lb....	25	Nat. Drug and Chem. Co., Halifax.
May 3	"	27335	P. B. Price & Co., Parrsboro, N.S.	½ pt....	20	T. B. Baker, St. John, N.B.
"	"	27336	W. D. McKenzie, Parrsboro, N.S.	3 bot..	45	Nat. Drug & Chem. Co., Halifax, N.S.
"	"	27337	Leo Gillespie, Parrsboro....	" ..	45	" "
May 7	"	27338	E. M. Walker, Dartmouth, N.S.	2 " ..	50	Fawcett Honey Co., Memramcook. N.B.
"	"	27339	Geo. Orman, Dartmouth, N.S.	" " ..	30	F. W. Fearman, Hamilton, Ont.
"	"	27340	Nat. Drug & Chemical Co., Halifax	3 " ..	30	Unknown.
"	"	27364	Jas. Hogan, Halifax.	2 " ..	40	Leonard Hill, Port Williams, N.S.
"	"	27365	W. A. Adams, Halifax.	1 jug..	40	B. C. Greeman, Toronto, Ont.

SESSIONAL PAPER No. 14

INLAND REVENUE DEPARTMENT—PUBLIC ANALYST LABORATORY.

Inspectors' Report.	Results of Analysis.			Opinion of the Chief Analyst.
	Direct Reading of Saccharimeter.	Water loss on drying at 70° C.	Physical Characteristics.	
R. J. WAUGH, INSPECTOR.				
Labeled Pure Honey.....	−14·30	22·30	Yellow, clear.....	Genuine.
Labeled Pure White Clover Honey.	−11·8	25·90	Brown, clear, tastes of buckwheat.	" water content high.
.....	−17·00	20·60	Yellow, slightly crystalized.	"
Warranted Pure.....	−13·10	20·50	Dark yellow, clear.....	"
.....	−13·70	21·25	Light brown, crystalized throughout.	"
.....	−11·90	27·10	Dark yellow, clear	" water content high.
.....	−15·80	22·40	Dark yellew, crystalized throughout.	"
Labele Pure Honey.....	−12·70	22·10	Dark yellow, clear	"
Warranted Pure Honey...	−11·70	21·40	Yellow, slightly crystalized.	"
Pure Buckwheatand Clover Honey.	−14·70	20·30	Dark yellow, slightly crystalized.	"
.....	−10·00	25·50	Brown, clear, slight taste of buckwheat.	" water content high.
.....	−11·60	26·00	Brown, clear.....	" "
Labeled PureWhite Clover.	− 3·50	25·70	Brown, clear.....	" "
" "	− 3·00	24·40	Yellow, crystalized	"
" "	−15·5	28·10	Brown, clear.....	" water content high.
Warranted Pure Honey...	−14·90	22·50	Yellow, crystalized throughout.	"
White Clover Honey.....	−15·00	26·70	Yellow, clear.....	" water content high.
.....	− 2·40	31·40	Yellow, clear.....	" "
Labeled Pure Honey.....	− 8·20	22·90	Yellow, clear.....	"
.....	−17·20	22·80	Pale yellow, partly crystalized.	"

TABLE I.—RECORD OF FOOD SAMPLES, HONEY, ANALYZED BY

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.
1907.						
			DISTRICT OF PRINCE EDWARD			
April 19	Honey.....	31101	Johnson & Johnson, Charlottetown.	3 bot...	90	Lyman Sons & Co., Montreal, P.Q.
" 19	"	31102	Geo. E. Hughes, Charlottetown.	3 " ...	45	Nat. Drug & Chem. Co., Ltd., Canada.
" 19	"	31103	C. D. Rankin, Charlottetown..	3 " ...	75	John Newson, Charlottetown.
" 19	"	31104	E. Keir, Kensington.....	3 " ...	75	Dr. Keir, Malpeque, P.E.I..
" 20	"	31105	Jas. McDonald, Summerside ..	3 " ...	45	E. H. Stewart, Niagara Falls.
" 20	"	31106	A. W. P. Gourlie, Summerside.	3 " ...	45	Can. Drug Co., Ltd., St. John, N.B.
" 20	"	31107	P. N. Enman, Summerside....	3 " ...	75	Fawcett Honey Co., Ltd., Memramcook, N.B.
" 20	"	31108	John Knight, Georgetown.....	3 " ...	75	Simpson Bros., Halifax.....
" 20	"	31109	A. McLean, Georgetown.....	3 " ...	54	Upton .....
" 20	"	31110	W. A. Pool, Lower Montague.	3 " ...	45	Hattie & Mylius, Halifax....
" 25	"	31116	Joseph McDonald, Cardigan...	3 " ...	60	Not known.....
May 1	"	32117	Mathew and McLean, Souris..	3 " ...	64	Dearborn & Co., St. John, N.B.
" 1	"	31118	Sterns & Son, Souris	3 " ...	54	L. Chaput Fils & Co., Montreal.
			DISTRICT OF NEW BRUNSWICK—			
April 12	Honey 'Bees'	24355	Magee & Geldart, 30 Johnston St., St. John, N.B.	3 jars...	45	Magee & Geldart, Crouchville, St. John Co., N.B.
" 12	" .	24356	Geo. S. Wetmore, Agent, Stall No. 1, City Market, St. John, N.B.	3 " ..	60	Miles E. Vanwart, Kings Co., N.B.
" 15	" .	24357	Walter H. Bell, 92 King St., St. John, N.B.	3 " ..	75	Leonard A. Hill, Port Williams, N.S.
" 15	" .	24358	M. E. Grass, 16 Germani St., St. John, N.B.	3 " ..	60	Fawcett Honey Co., Ltd., Memramcook, N.B.
" 24	" .	24386	S. L. Stockton, Petticodiac, N.B.	3 " ..	54	E. L. Colpitts & Co., Petticodiac, N.B.
" 24	" .	24387	E. L. Colpitts, Petticodiac, N.B.	3 " ..	60	Vendor.....
" 26	" .	24389	Miller Bros., Newcastle, N. Co., N.B.	3 " ..	60	Fawcett Honey Co., Ltd., Memramcook, N.B.
" 26	" .	24390	Geo. Stables, Public Square, Newcastle, N.B.	3 " ..	75	Jas. McLaggan, Covered Bridge, N.B.
" 29	" .	24391	A. Normand Les Brisay, St. George St., Bathurst, N.B.	3 " ..	45	The Canadian Drug Co., Ltd., St. John, N.B.
" 30	" .	24384	Geo. St. Ogne, Water St., Campbellton, N.B.	3 " ..	75	Leonard A. Hill, Port Williams, N.S.
" 25	" .	24388	Geo. A. Robertson, Main St., Moncton, N.B.	3 " ..	60	Fawcett Honey Co., Ltd., Memramcook, N.B.
" 23	" .	24385	W. B. McKay & Co., Main St.. Sussex, N.B.	3 tumblers.	54	Farmers at Comhill, N.B....

SESSIONAL PAPER No. 14

INLAND REVENUE DEPARTMENT—Public Analyst Laboratory.

Inspector's Report.	Result of analysis.			Opinion of the Chief Analyst.	
	Direct reading of Saccharimeter.	Water loss on drying at 70° C.	Physical Characteristics.		
ISLAND—T. MOORE, INSPECTOR.					
Clarafied especially for Lyman Sons & Co.	−14·60	22·00	Pale yellow, Crystallized throughout.	Genuine.	
....	−10·80	29·70	Brown, clear.....	"	Water content high.
... .	− 5·60	25·80	Pale yellow, clear.....	"	"
....	− 2·60	27·60	Yellow, clear.....	"	"
.....	−17·10	24·60	White, clear	"	
....	−13·80	26·00	Yellow, partly crystallized.	"	"
....	−14·5	21·20	Yellow, partly crystallized.	"	
Clover honey	−11·50	26·20	Yellow, almost all crystallized.	"	"
....	−10·80	20·80	Yellow, almost all crystallized.	"	
....	− 6·00	24·20	Brown, almost all crystallized.	"	
Pure clover honey,.....	+ 48·0	24·80	Pale yellow, erystallized throughout.	Contains glucose.	Adulterated.
....	+ 40·9	22·20	.....	"	"
Clarified honey	+ 77·3	20·60	.. ..	"	"
J. C. FERGUSON, INSPECTOR.					
Label—Extracted Honey..	- 13·30	23·00	Yellow, clear	Genuine.	
No label on bottle	− 10·60	20·80	Dark brown, clear.....	"	
Warranted Pure Honey....	− 12·50	18·00	Brown, clear.....	"	
Pure Honey	− 12·70	20·60	Dark yellow, clear	"	
"	− 16·80	19·80	Dark brown, muddy.....	"	
Labeled Pure Honey .. .	− 14·30	19·60	Partly crystallized, yellow.	"	
Pure Honey	− 7·40	19·60	Slightly crystallized, yellow.	"	
Pure 'Bee's Honey'.... .	− 7·20	24·40	Slightly crystallized, brown.	"	
Pure White Clover Honey (Label).	+ 3.70	27·00	Light brown, clear.....	Doubtful; water content high Probably contains cane sugar.	
Warranted Pure Honey (Label).	− 11·50	19·80	Crystallized throughout, yellow.	Genuine.	
Pure Honey	− 9·30	20·00	Yellow, clear.....	"	
Buckwheat Honey	− 16·00	20·40	Dark brown, clear.....	"	

TABLE I.—RECORD OF FOOD SAMPLES, HONEY, ANALYZED BY

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.
1907.						
			DISTRICT OF NEW BRUNSWICK—			
May 9	"	29511	Johnston & Johnston, King St., St. Stephen, N.B.	3 bottles	60	Geo. F. Beach, Honeydale, N.B.
" 9	"	29512	Geo. F. Beach, Meadows, N.B.	3 "	60	Vendors
" 11	"	29513	W. R. Logan, Queen St., Fredericton, N.B.	3 jars	66	Horace Pugh, Marysville, N.B.
" 11	"	29514	Hatt, Morrison Co., Ltd., Fredericton, N.B.	3 "	75	Not known
" 11	"	29515	The '2' Bakers, Ltd., Queen St., Fredericton, N.B.	3 "	60	James McLaggan, Covered Bridge, N.B.
" 13	"	29516	J. W. Dalling, Woodstock, N.B.	3 tumblers.	45	Ernest Bell, Hartland, N.B.
" 13	"	29517	H. G. Noble. Main St., Woodstock, N.B.	3 "	54	J. A. Carpenter, Bloomfield, N.B.
" 14	"	29518	Garden Bros., Main St., Woodstock, N.B.	3 bottles	30	Sterling Peabody, Carleton, N.B.
			DISTRICT OF QUEBEC.—			
April 3	Honey	26180	Jacques Verret, Charlebourg	1 lb	30	Vendor
" 3	"	26181	V. Leguré, Charlebourg	1¼ "	20	Exavier Jeroux, Charlebourg
" 3	"	26182	Pierre Verret, St. Ambroise. P.Q.	1 "	25	Jacques Verret, Charlebourg
" 3	"	28183	H. Ross & Son, Indian Larrett.	1 "	25	" "
" 3	"	26184	Jules Verrett	1 "	25	" "
" 3	"	26185	A. Rochette, St. Ambroise	3 bots	45	Nazaire Turcotte, Quebec
" 3	"	26186	J. Martel, St. Ambroise	2 glasses	30	F. X. Gauvreaux
" 3	"	26187	François Reneaud	1 lb	25	Mad. Godin
" 4	"	26188	Jos. Mercier, Ste. Anne Beaupré.	1 "	20	Jos. Mercier, Ste. Anne Beaupré.
" 4	"	26189	Jos. Mercier, Ste. Anne Beaupré.	1 "	25	" "
" 5	"	26196	J. A. Chabot, 271 St. Joseph	1 "	20	" "
" 8	"	26200	Elzear Gagnon, 138 Dorchester.	1 "	30	Dr. Ed. Morin
" 8	"	26202	J. D. Marier, 136 Dorchester	1 "	39	Unknown
" 8	"	26203	" "	1 "	39	"
" 8	"	26204	" "	1 "	30	"
" 19	"	26233	C. P. Lynsay, St. Marie Beauce	3 glasses	75	Vendor
" 19	"	26241	Arnias Dupuis, St. Marie Beauce.	1 lb	30	"
" 22	"	26246	F. X. Paquet, 54 Côte du Palais.	3 glasses	45	Pierre Drolet, Encienne Lorette.

SESSIONAL PAPER No. 14

INLAND REVENUE DEPARTMENT—Public Analyst Laboratory.

Inspector's Report.	Results of Analysis.			Opinion of the Chief Analyst.
	Direct reading of Saccharimeter.	Water loss on drying at 70 C.	Physical Characteristics.	
J. C. FERGUSON, INSPECTEUR.—*Con.*				
....	− 14·80	24·00	Partly crystallized, light brown.	Genuine.
Label—Pure Clover Honey.	+ 15·00	19·80	Brown, clear.....	Doubtful.
No label on jar...	− 1·00	20·00	" "	Genuine.
Thought to be Buckwheat Honey.	+ 5·00	22·40	" "	Presumably genuine.
Label—Pure Bee's Honey..	− 8·80	22·00	" "	Genuine.
No label.....	− 8·70	20·60	Slightly crystallized, yellow.	"
"	− 4.00	21·40	Partly crystallized, yellow.	"
"	− 9·50	20·20	Brown, clear.....	"
E. BELAND, INSPECTOR.				
....	− 2·5	20·40	Pale yellow, clear	Genuine.
.....	− 3·0	20·60	Pale yellow, slightly crystallized.	"
....	− 5·2	21·60	Pale yellow, slightly crystallized.	"
.....	− 5·0	20·20	Pale yellow, clear.....	"
....	− 3·0	20·80	Pale yellow, partly crystallized.	"
....	− 9·5	20·40	Pale yellow, crystallized throughout.	"
....	+ 3·0	18·80	Pale yellow, clear.....	Adulterated with cane sugar.
.....	−12·0	23·40	Brown, slightly crystal lized.	Genuine.
....	−10·8	23·00	Brown, clear.....	"
....	−15·7	22·20	Brown, partly crystallized.	"
....	−11·0	22·80	Brown, partly crystallized.	"
....	− 2·1	21·80	Pale yellow, slightly crystallized.	"
....	−15·3	23·20	Brown, clear..... ...	"
.....	−14·0	22·20	Brown, partly crystallized.	"
....	+23·4	24·80	Yellow, clear.....	Adulterated with cane sugar.
....	− 2·5	21·20	Yellow, partly crystallized.	Genuine.
....	+18·8	23·40	Brown, muddy.....	Doubtful.
.....	− 9·0	23·20	Pale yellow, crystallized throughout.	Genuine.

TABLE I.—RECORD OF FOOD SAMPLES, HONEY, ANALYZED BY

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.
1907.						
			DISTRICT OF QUEBEC—			
April 22	Honey	26247	Jos. Savard, 35 St. Jean	3 "	60	Dr. Gauvreaux, Charlebourg
" 5	"	26198	Jos. Farlardeau, 268 Roi St	1 lb	20	General Hospital
			DISTRICT OF ST. HYACINTHE.—			
April 17	Honey	41	P. J. Girard, Richmond	1 qt	60	W, E. Lefebvre, St. Antoine, Abbe.
" 17	"	42	E. J. Pearson, Richmond	2 jars	60	H. G. Silver, Danville
" 19	"	43	P. E. Beaudoin, Thetford	3 glasses	54	W. Brune & Cie, Quebec
" 19	"	44	Clovis Biron, Thetford	2 lb	36	Himself
" 19	"	45	Kings Mines Store	3 jars	60	Lyman Sons & Co., Montreal
" 23	"	46	Samuel Des Landes, St Liboire	24 oz	15	Himself
" 23	"	47	Ant. Chicome, Acton Vale	1 jar	60	"
" 23	"	48	Jos. St. Pierre, Acton Vale	1 "	60	R. F. Laroque, Notre Dame du Bon Conseil.
" 24	"	49	A. C. Gilmour, Waterloo	2 "	30	A. A. Lapierre, Montreal
May 1	"	50	A. McLaughlin, Cowansville	3 "	45	E. J. Bury, Brome, Que
" 3	"	51	May & Houlahan, Sherbrooke	3 "	75	C. T. Ross, Sherbrooke
" 3	"	52	G. E. Robitaille, Sherbrooke	3 glasses	45	Not Known
" 3	"	53	Biron & Blouin, East Sherbrooke.	3 jars	45	Jos. Lamoureux & Cie, Montreal.
" 3	"	54	A. L. Dupuis, Coaticook	21 ozs	20	A. O. Cariere, St. Francois du Lac.
" 7	"	55	C. H. Digman, Eastman	3 jars	60	A. Bowes & Co., Montreal
" 8	"	56	G. A. Truax, Farnham	25 ozs	25	Mr. Morin, St. Paul Abbotsford.
" 8	"	57	P. Larochelle, Farnham	2 lb	25	A. L. Racine, Emileville
" 10	"	58	S. N. Fonteneau, Marieville	2 "	24	Mr. Lebrum, St. Dunace
" 11	"	59	Ed. Viens, St. Thomas d'Aquinet.	1 jar	50	Himself
" 13	"	60	Jos. Leduce, St. Hyacinthe	2 lb	25	Oscar Peltier, St. Hyacinthe le Confesseur.

SESSIONAL PAPER No. 14

INLAND REVENUE DEPARTMENT—Public Analyst Laboratory.

Inspector's Report.	Results of Analysis.			Opinion of the Chief Analyst
	Direct readings of Saccharimeter.	Water loss on drying at 70°C.	Physical Characteristics.	
E. BELAND, INSPECTOR.—*Con.*				
.....	−12·7	17·80	White, crystallized throughout.	Genuine.
.....	− 6·2	21·00	Pale yellow, crystallized throughout.	"
J. C. ROULEAU, INSPECTOR.				
No Label	−12·0	22·60	Brown. Muddy.....	Genuine.
"	− 9·0	22·40	Yellow. Crystallized throughout.	"
Pure Virgin Honey.....	− 6·2	20·40	Pale yellow. Crystallized throughout.	"
.....	−12·3	25·60	Pale yellow. Crystallized throughout.	" Water coutent high.
Fine New Honey.....	−12·4	23·20	White. Crystallized throughout.	"
.....	−10·0	19·80	Brown. Crystallized throughout.	"
.....	−15·0	28·40	Brown. Partly crystallized.	" Water content high.
Pure Honey.....	−23·5	26·60	Brown. Partly crystallized.	" " " "
White Clover Honey Guaranteed Pure.	−13·7	23·00	Pale yellow. Partly crystallized.	"
Pure Honey	−10·0	21·20	Yellow. Crystallized throughout.	"
.....	−13·9	22·40	Yellow. Clear.....	"
.....	−15·1	24·00	Brown. Partly crystallized.	"
Marked Compound.....	+92·5	27·20	Brown. Partly crystallized.	Sold as compound. Water content high.
Pure Honey.....	−10·0	22·00	Brown. Crystallized throughout.	Genuine.
Put up by Vendor.....	−15·0	22·20	Brown. Crystallized throughout.	"
.....	−16·7	23·60	.....	"
.....	−16·0	29·60	Pale yellow. Crystallized throughout.	" Water content high.
.....	− 8·3	25·60	.....	" " " "
.....	− 8·9	24·80	.....	"
.....	− 2·0	21·20	Yellow. Crystallized throughout.	"

TABLE I—REOORD OF FOOD SAMPLES, HONEY, ANALYZED BY

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.
1907.						
			DISTRICT OF MONTREAL—			
April 3	Honey.....	31681	Howe & McIntyre, 91 Youville, Montreal.	3 jars ..	40	Vendor ....
" 17	"	31682	Leduc et Frere.....	3 pots ..	30	H. Sauve, St. Stanislas .....
" 22	"	31685	Nap. Morin & Co., Bonsecours Market.	2 lb	20	.. . .
" 22	"	31686	A. Laurandeau, 85 St. Paul St., Montreal.	3 pots ..	30	J. Lamoureaux, Montreal...
" 22	"	31687	Jos. Choquette. 486 Lagauchetière St., Montreal.	2½ lb ...	30	.. ..
" 22	"	31688	H. Lagace, 252 Amherst St., Montreal.	2½ lb ...	30	Gunn & Langlois, Montreal..
" 22	"	31689	" " ..	2½ lb ...	25	.. ..
" 23	"	31690	John Hunter & Son, Huntingdon.	1 jar....	45	Not known.....
" 23	"	31691	Jas. Brown, Huntingdon.....	1 " ...	45	Neil O'Hare, O'Neills Corners
" 25	"	31692	Aubin & Co., St. Lawrence Market, Montreal.	3 " ...	38	Not known.....
" 26	"	31693	G. W. Brunet, St. Antoine Market, Montreal.	2 " ...	20	" .....
" 26	"	31694	W. J. Falle, St. Antoine Market, Montreal.	2 " ...	30	J. McIntosh, Vankleek Hill.
" 26	"	31695	" " ..	2 " ...	30	Not known. . .. .
May 1	"	31696	E. J. Moineau, 2 Craig St. West, Montreal.	3 " ...	53	" ....
" 2	"	31697	M. Ethier, Bonsecours Market, Montreal.	1 tin....	60	A. Denault (Farmer).....
" 2	"	31698	L. Beaudoin, 21 Vitre St. W., Montreal.	3 jars...	30	N. Belanger, Montreal.....
" 2	"	31699	T. H. Mallette, 20 Lagauchetière St. W., Montreal.	1 bot....	30	Not known. ....
" 2	"	31700	J. A. Desaulners, 1135 St. Lawrence St., Montreal.	3 jars...	36	Fortier & Monnette, Montreal.
April 20	"	31683	A. A. Lapierre, 773 Notre Dame St. East, Montreal.	3 pots ..	25	Vendor .....
" 20	"	31684	J. A. Perreault, 40 Plessis St., Montreal.	3 " ..	25	Put up by Vendor.... ....
			DISTRICT OF OTTAWA—A. E. SANDERSON,			
April 15	Honey.....	32376	Bryson, Graham & Co., Sparks St., Ottawa.	3 bottles	60	Not known.....
" 25	"	32201	Philorum Dedine, Embrum, Ont.	3 cans ..	75	S. J. Major, Ottawa.... ...
" 26	"	32202	J. B. Lafrance & Co., Crysler, Ont.	3 jars...	1 20	Robt. McConnell, Cannamore, Montreal.

SESSIONAL PAPER No. 14

INLAND REVENUE DEPARTMENT—PUBLIC ANALYST LABORATORY.

Inspector's Report.	Results of Analysis.			Opinion of the Chief Analyst.
	Direct Readings of Saccharimeter.	Water loss on drying at 70° C.	Physical Characteristics.	
J. J. COSTIGAN, INSPECTOR.				
Labelled "Clover." "This delicious table delicacy is prepaired with the choicest clover honey, refined, &c."	+47·2	24·80	Yellow. Clear.....	"Compound" stencilled on bottle.
.....	−18·0	22·00	Brown, partly crystallized. Tastes of buckwheat.	Genuine.
Sold as pure.....	−16·0	21·00	Brown. Thick.....	"
Marked Compound	+96·5	26·00	"	Marked "Compound." Water content high.
....	+49·1	25·20	Yellow. Clear.....	Adulterated with glucose syrup. Water content high.
....	−12·0	21·80	Pale yellow. Crystallized throughout.	Genuine.
....	−14·0	20·80	Brown. Partly crystallized.	"
....	−13·0	22·20	Yellow. Crystallized almost throughout.	"
.....	−12·5	20·20	Brown. Crystallized throughout.	"
....	−18·0	22·20	Yellow. Partly crystallized.	"
.....	−18·4	20·80	Brown. Thick.....	"
....	−16·6	23·20	Light brown. Partly crystallized.	"
....	− 9·8	22·40	Yellow. Crystallized throughout.	"
....	−15·0	23·60	White. Crystallized almost throughout.	"
Canadian Honey.....	−14·5	23·40	Yellow. Crystallized almost throughout.	"
Compound on label in small type.	+108·0	25·40	Brown. Thick.....	Marked "Compound." Water content high.
.....	− 4·5	19·20	Yellow. Clear.....	Genuine.
....	−20·0	25·40	Brown. Partly crystallized.	" Water content high.
Labeled Compound. "Red Colt Brand."	+ 5·3	27·80	Brown. Slightly crystallized.	Marked "Compound." Water content high.
Labeled Compound. "Miel Canadian.	+98·7	25·80	Brown. Rather thick...	" "
INSPECTOR. E. BELISLE, GENERAL INSPECTOR.				
No label on bottle.....	− 9·8	19·40	Light brown. Clear....	Genuine.
Sold as pure.....	− 14·0	23·60	Dark brown. Crystallized.	"
"	− 11·2	20·80	Light yellow. Crystallized throughout.	"

TABLE 1.—RECORD OF FOOD SAMPLES, HONEY, ANALYZED BY

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.
1907.						
			DISTRICT OF OTTAW—J. E. SANDERSON			
April 26	Honey.....	32203	O. Piquette, Cambridge Road, Ont.	3 " .	45	J. A. Perreault, Montreal...
" 27	"	32204	D. Robillard, Hawkesbury, Ont.	3 " ..	45	Unknown .. ..
" 29	"	32205	C. P. Wright, Aylmer, P.Q ...	3 " ..	60	S. J. Major, Ottawa, Ont ...
" 29	"	32206	F. Souliere, Aylmer, P.Q	3 " ..	30	Jos. Lamoureux & Cie, Montreal.
" 29	"	32207	N. Mathé, Aylmer, P.Q.....	3 " ..	30	S. J. Major, Ottawa.....
May 7	"	32208	Therien & Frères, Hull, P.Q...	3 " ..	30	Jos. Lamoureux & Cie, Montreal.
" 8	"	32209	A. Villeneuve, Gatineau Point, P.Q.	3 " ..	30	Jos. Lamoureux & Cie, Montreal.
" 8	"	32210	A. J. Smith, Gatineau Point ..	3 " ..	60	S. S. Major, Ottawa.....
" 29	"	32211	H. A. Layng, Smith's Falls ...	2½ lbs..	30	Jno. Findlay, Smith's Falls .
" 29	"	32212	W. Hyndman, Smith's Falls. .	3 jars...	45	Upton's... .. ..
June 29	"	32213	Foster Bennett & Co., Ltd., River Desert, P.Q.	3 lbs....	45	Rev. Father Oblate, Maniwaki.
" 29	"	32214	Anastase Roy, Maniwaki, P.Q.	3 jars...	50	S. J. Major, Ltd., Ottawa...
July 2	"	32215	Jules Faure, Gracefield, P.Q...	3 " ..	54	" ...
" 3	"	32216	A. Labelle, Hull, P.Q.....	3 glasses	30	Jos. Lamoureux, Montreal..
" 3	"	32217	O. Lemieux, Hull, P.Q.....	3 " .	30	" ..
" 3	"	32218	P. Daoust & Cie, Hull, P.Q....	3 " .	30	G. Leduc, Thurso, P.Q.....
" 4	"	32219	F. X. Groulx, King Edward Ave., Ottawa.	3 " .	30	Jos. Lamoureux & Cie, Montreal.
			DISTRICT OF KINGSTON—			
April 2	Honey	31078	J. Purdy, Earl St., Kingston..	1½ pts..	45	.....
"	"	31079	C. S. Litton, Alfred St., Kingston.	" ..	"	. . ..
"	"	31085	W. A. Smith, Brock St., Kingston.	3 lbs...	38	Parkhill, Kingston.....
"	"	31086	J. Cullen, Princess St., Kingston.	" ..	"	" .....
"	"	31087	C. Saunders, Princess St., Kingston.	1½ lbs...	36	....
"	"	31089	Anderson Bros., Princess St., Kingston.	1½ pts..	45	Bartels, Morven, Ont.....
" 3	"	31094	A. J. McCrodan, Front St., Belleville.	" ..	30	....

SESSIONAL PAPER No. 14

INLAND REVENUE DEPARTMENT—Public Analyst Laboratory.

Inspector's Report.	Result of Analysis.			Opinion of the Chief Analyst.
	Direct reading of Saccharimeter.	Water loss on drying at 70° C.	Physical Characteristics.	
INSPECTOR. E. BELISLE, GENERAL INSPECTOR.—*Con.*				
Sold as pure	+114·1	22·40	Brown. Muddy	Word "Compound" in small type on label.
"	− 14·0	18·80	Light yellow. Crystallized throughout.	Genuine.
"	− 13·2	19·40	Brown. Partly crystallized.	"
Marked compound in very small characters.	+ 81·7	26·60	Dark brown. Clear	Marked "Compound." Water content high.
No label, thought to be from Major.	+ 97·8	26·20	"	Adulterated. No visible marking on remnant of a strip of paper surrounding the cover. Water content high.
Marked compound in very small characters.	+ 94·3	26·60	"	Marked "Compound." Water content high.
Marked compound in very small characters.	+ 90·5	26·20	"	" "
Labelled pure honey	− 1·0	19·60	Yellow. Crystallized throughout.	Genuine.
Sold as honey from bulk	− 8·0	22·60	Dark yellow. Slightly crystallized.	"
Labelled pure clarified honey.	− 15·3	18·60	Dark yellow. Crystallized throughout.	"
Sold as pure honey	− 5·0	21·60	Yellow. Crystallized throughout.	"
Brown honey	− 17·0	26·40	Dark brown. Thick	" Water content high.
"	− 14 0	26·60	Dark brown. Clear	" "
Marked compound on label in small characters.	+ 82·0	25·60	Light brown. Thick	Marked "Compound." Water content high.
Sold as compound.	+ 96·2	25·00	Brown. Muddy	Sold as compound. Water content high.
Sold as pure honey from buckwheat.	− 19·4	24·60	Dark brown. Partly crystallized.	Genuine.
Sold as compound	+ 97·5	26·60	Dark brown. Thick	Sold as compound. Water content high.
JAMES HOGAN, INSPECTOR.				
	−11·80	20·00	Yellow, crystalized throughout.	Genuine.
	− 7·00	23·40	Yellow, crystalized throughout.	"
	−12·00	23·00	Yellow, crystalized throughout.	"
	−13·00	23·00	Yellow, crystalized, throughout.	"
	− 8·90	22·40	Yellow, all crystalized	"
	−11·90	23·00	Brown, partly crystalized, tastes of buckwheat,	"
	−16·30	23·20	Yellow, crystalized throughout.	"

TABLE I.—RECORD OF FOOD SAMPLES, HONEY, ANALYZED BY

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Frunisher as given by Vendor.
1907						
			DISTRICT OF KINGSTON—			
April 3	Honey	32402	G. Pearson, Front St., Belleville	"	"	
" 4	"	32407	W. M. Robson, Kent St., Lindsay.	"	38	
"	"	32409	Adams Bros., Kent St., Lindsay.	3 pts.	75	
"	"	32413	R. L. Campbell, Kent St., Lindsay.		55	
"	"	32415	White & Gillespie, George St., Peterboro.	1½ pts.	40	
"	"	32417	Mason & Co., George St., Peterboro.	"	30	
"	"	32422	R. A. Dutton, George St., Peterboro.	"	45	Upton
" 5	"	32428	H. Burniam, Charlotte St., Peterboro.	"	30	
"	"	32430	J. Heal, Charlotte St., Peterboro.	"	"	
"	"	32432	A. J. Warne, Charlotte St., Peterboro.	"	45	
"	"	32434	J. Sutherland, George St., Peterboro.	"	60	White & Co., Toronto
"	"	32435	J. R. Bell, Hunter St., Peterboro.	"	45	Upton
"	"	32438	W. A. Hamilton, Peterboro	1½ lbs.	75	W. Anderson, Peterboro
			DISTRICT OF TORONTO.—			
May 8	Honey	33201	W. Eddy, Toronto	3 jars.	45	J. J. Fee, Toronto
" 8	"	33202	Spencer Smith, Toronto	3 "	30	Rutherford, Marshal & Co., Toronto.
" 8	"	33203	Allen Martindale, Toronto	3 "	30	John Callicot, Toronto
" 9	"	33204	Bruce & Sanderson, Toronto	2 pts	60	White & Co., Toronto
" 9	"	33205	Oliver Taylor, Toronto	3 jars.	39	Rutherford, Marshal & Co., Toronto.
" 10	"	33206	W. Massen, Toronto	3 "	30	T. W. Humphrey, Toronto
" 14	"	33207	W. Scott, Toronto Jct.	3 "	30	White & Co., Toronto
" 14	"	33208	M. J. Tobino, Toronto Jct.	3 "	30	Sibbald, Claud, Ont
" 14	"	33209	E. Grainger & Co., Toronto	3 "	45	E. Grainger & Co., Toronto.
" 14	"	33210	P. J. Crown, Toronto	2 "	30	Warren Bros., Toronto
" 17	"	33211	C. K. Hewitt, East Toronto.	1 pt.	30	Rutherford, Marshal & Co., Toronto.
" 20	"	33212	W. J. Rykman, Hamilton	1 "	35	Merchant at Onida.

SESSIONAL PAPER No. 14

INLAND REVENUE DEPARTMENT—Public Analyst Laboratory.

Inspector's Report.	Results of Analysis.			Opinion of the Chief Analyst.
	Direct reading of Saccharimeter.	Water loss on drying at 70° C.	Physical Characteristics.	
JAMES HOGAN, INSPECTOR.—*Con.*				
....	−15·30	24·00	Brown, crystalized throughout.	Genuine.
....	−12·50	22·20	Yellow, crystalized throughout.	"
....	−12·20	23·00	Brown, crystalized throughout.	"
....	−16·60	21·40	Yellow, crystalized throughout.	"
....	−14·30	22·00	Brown, slightly crystalized.	"
.. ..	− 8·70	22·80	Yellow, crystalized throughout.	"
... .	−13·20	19·60	Brown, clear.....	"
....	−12·30	21·80	Brown, very slightly crystalized.	"
....	−12·60	22·80	Yellow, crystalized throughout.	"
....	−16·00	22·20	Brown, crystalized throughout, buckwheat taste.	"
... .	− 5·00	20·60	Yellow, crystalized throughout.	"
.. ..	−13·70	22·00	Brown, partly crystalized.	"
....	−11·80	20·60	Yellow, crystalized throughout.	"
H. J. DAGER, INSPECTOR.				
Labeled pure.....	−15·3	24·70	Dark yellow. Crystallized throughout.	Genuine.
"	−16·0	23·40	" " ..	"
"	−17·6	24·00	Light yellow. Slightly crystallized.	"
No label. Guaranteed pure.	−16·8	21·80	Yellow. Crystallized throughour.	"
" " ..	−18·0	22·20	Light yellow. Crystallized throughout.	"
"	+10·8	25·40	Yellow. Clear.	Adulterated with cane suga Water content high.
, ...	−13·2	22·60	Yellow. Crystallized throughout.	Genuine.
" Pure honey.	+17·8	23·40	Yellow. Clear.....	Adulterated with cane sugar.
Labeled pure. Guaranteed pure.	−16·3	22·20	Yellow. Slightly crystalized.	Genuine.
No label. Bottled by Vendor as pure.	−16·0	24·00	Dark yellow. Clear.....	"
Guaranteed pure.	−11·8	23·00	Yellow. Crystallized almost throughout.	"
Buckwheat Honey.....	−10·0	23·00	Dark yellow. Crystallized throughout.	"

TABLE I.—RECORD OF FOOD SAMPLES, HONEY, ANALYZED BY

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher as given by Vendor.
				Quantity.	Cents.	
1907.						
						DISTRICT OF TORONTO.—
May 20	Honey.....	33213	Battrem & Co., Hamilton.	2 jars...	50	White & Co., Hamilton.....
" 20	"	33214	Bain & Adams, Hamilton.	3 " ..	54	Vendor .....
" 20	"	33215	W. J. O'Brien, Hamilton.....	1 tin...	25	F. W. Fearman, Hamilton..
" 21	"	33216	D. Lavrock, Hamilton	2 jars...	40	A farmer near Hamilton....
" 21	"	33217	Jas. Osborn & Son, Hamilton..	2 " ..	40	F. W. Freeman, Hamilton..
" 21	"	33218	A. S. Cain, Dundas.	3 " ..	60	Obtained from a farmer.....
" 21	"	33219	H. F. Powell, Dundas.....	1 lb	12	McPherson, Glasco & Co., Hamilton.
" 21	"	33220	T. R. Martin, Hamilton.....	2 jars...	30	Lucas, Bristol & Steel, Hamilton.
						DISTRICT OF LONDON—
April 16	Honey.....	30301	P. J. Dean, Goderich.....	1½ lb..	18	George Harris & Co., Dunganon.
" 19	"	30309	Barnsdale Trading Co., Stratford.	3 Cups.	36	Warren Bros. & Co., Toronto
" 23	"	30317	Ryan & Russell, Richmond St., London.	3 " .	45	....
" 23	"	30318	Hugh Malcomson, Chatham...	3 " .	45	W. A. Crysler, Chatham....
" 25	"	30324	G. B. Lodge, Windsor.....	3 " .	30	Wall & Guffey, Windsor....
" 26	"	30328	A. McKingly, St. Thomas.....	3 " .	54	R. H. Smith, St. Thomas....
May 1	"	30333	Alma Moose, Wingham..	3 " .	30	Masuret & Co., London.....
" 1	"	30336	W. A. Dulmage, Harrison.. ..	1 Pt..	25	S. A. Todd, Harrison.....
" 2	"	30339	John Goos, Walkerton.....	3 Cups.	30	J. A. McIntyre.....
" 2	"	30340	H. H. Engle & Co., Hanover..	3 " .	30	Not known.....
" 3	"	30343	Haleday & Stenson, Chesley...	3 " .	20	" . .....
" 4	"	30347	White Packing Co., Stratford..	3 " .	45	" .....
" 8	"	30349	Jackson & Son, Guelph...	3 lb..	30	" .....
" 8	"	30352	Scroggie Browner, Guelph.....	3 Cups.	30	John Nowlan & Son, New Town.
" 9	"	30353	Michel & Co., King St., Toronto.	3 " .	45	Wm. Couse, Streetsville.....
" 10	"	30356	D. Bell, Church St., Toronto..	3 " .	30	Rutherford & Marshall, Toronto.
" 10	"	30358	J. W. Nettecloss, Toronto.....	2 " .	20	Humphy & Co., Toronto....
" 10	"	30360	A. Probin, 134 King St., Toronto.	3 " .	30	H. G. Gebbald, Claud.. . .
" 13	"	30363	Frank Kernick, Alleston	2 lb..	35	Telford Bros., Collingwood..
" 15	"	30369	Rutherford & Marshall, Front St. Toronto.	3 Cups.	25	Not known.....

SESSIONAL PAPER No. 14

INLAND REVENUE DEPARTMENT—Public Analyst Laboratory.

Inspector's Report.	Results of Analysis.			Opinion of the Chief Analyst.
	Direct readings of Saccharimeter.	Water loss on drying at 70°C.	Physical Characteristics.	
H. J. DAGER, INSPECLOR—*Con.*				
.....	−12·5	23·60	Yellow. Partly crystallized.	Genuine.
.....	−12·0	21·40	Yellow. Crystallized throughout.	"
Labeled pure honey.....	−10·0	24·00	Yellow. Crystallized almost throughout.	"
Extracted from comb by Vendor.	− 9·0	21·80	Yellow. Clear.....	"
Vendor bottled from bulk..	−10·5	21·40	Light yellow. Slightly crystallized.	"
Bottled by Vendor.....	−14·3	24·00	Light yellow. Crystallized throughout.	"
....	−11·3	21·40	Light yellow. Crystallized throughout.	"
.....	−14·0	25·00	Yellow. Slightly crystallized.	" Water content high.
T. KIDD, INSPECTOR.				
....	−16·6	21·00	White. Crystallized throughout.	Genuine.
....	− 9·8	24·60	Yellow. Partly Crystallized.	"
.....	−13·8	21·80	Yellow. Clear.....	"
....	−13·0	23·40	" "	"
.....	−14·4	25·00	" "	" Water content high.
....	−14·0	22·80	Yellow. Crystallized throughout.	"
....	−15·7	24·80	Yellow. Partly Crystallized.	"
... .	−13·7	22·00	Yellow. Partly Crystallized.	"
....	−12·6	22·40	Brown. Crystallized throughout.	"
....	−10·6	21·20	Yellow. Clear.	"
.. ..	− 9·4	19·60	Light yellow. Partly crystallized.	"
....	− 5·4	21·40	Brown. Slightly crystallized.	"
Clover honey	−13·9	23·40	Yellow. Nearly all crystallized.	"
.. ..	+ 9·3	24·20	Dark Brown. Clear....	Adulterated with cane sugar.
....	−13·5	23·00	Yellow. Slightly Crystallized.	Genuine.
.....	− 9·8	22·20	Yellow. Partly Crystallized.	"
....	−10·0	23·60	Yellow. Clear.	"
Branded Clover Honey....	+17·7	27·00	" "	Adulterated with cane sugar. Water content high.
.....	−16·4	24·20	Yellow. All Crystallized	Genuine.
Branded pure Honey	−18·3	23·60	Light yellow. Nearly all Crystallized.	"

TABLE I.—RECORD OF FOOD SAMPLES, HONEY, ANALYZED BY

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.
1907.						
			DISTRICT OF MANITOBA—			
May 16	Honey	25812	Sutherland Bros., Winnipeg	3 lbs	60	Campbell Bros. & Wilson, Winnipeg.
" 15	"	25826	J. Patterson, Winnipeg	5 "	90	G. E. Saunders, Hornby, Ont.
" 15	"	25827	A. R. Christie, Winnipeg	5 "	85	.....
" 15	"	25828	W. H. Stone & Co., Winnipeg.	5 "	75	Whellams, Kildonan, Man..
" 16	"	25829	Bragg Bros., Winnipeg	3 "	75	Foley, Lock & Larsen, Winnipeg.
" 16	"	25830	Laurie Bros., Winnipeg	5 "	75	McPherson Fruit Co., Winnipeg.
" 17	"	25831	S. Elliott & Co., Winnipeg	3 "	75	White Star Mfg. Co
" 17	"	25832	J. R. VanNorman, Winnipeg	3 "	75	.....
" 17	"	25833	D. A. Richie, Winnipeg	5 "	1 00	J. J. Gunn, Gonor, Man
" 17	"	25834	J. H. McGrath, Winnipeg	3 "	75	A. A. McDonald, Winnipeg.
" 17	"	25835	G. T. Hoyes, Winnipeg	3 "	75	Foley, Lock & Larsen, Winnipeg.
" 27	"	25839	T. A. Newman Bros., Portage la Prairie.	3 "	70	E. B. Blaine, Toronto
" 27	"	25840	C. S. B. Burley, Portage la Prairie.	3 "	50	Not known
" 27	"	25841	J. O'Reilly, Portage la Prairie.	3 "	70	E. D. Smith, Winona, Ont..
" 27	"	25842	J. & E. Brown, Portage la Prairie.	3 "	60	Wm. Fielder, Franklin, Man.
" 22	"	25836	Martin & Johnson, Brandon	3 "	75	Wilson Com. Co., Brandon.
" 23	"	25837	A. Grant, Brandon	3 "	5	E. D. Smith, Winona, Ont..
" 23	"	25838	Star Grocery, Brandon	3 "	75	Wilson Com. Co., Brandon.
" 28	"	25844	T. R. Brough, Carberry	3 "	75	G. A. Deadman, Brussels, Ont.
" 28	"	25845	Geo. Kennedy, Carberry	3 "	75	Dundas & Flavelle Bros., Lindsay, Ont.
			DISTRICT OF CALGARY—			
May 9	Honey	28721	Horne & Spice, Lacombe	3 bots	1 05	Pacific Fruit & Syrup Co., San Francisco, U.S.A.
" 9	"	28722	A. Urquhart & Co., Lacombe	3 "	60	Upton & Co., London, Ont..
" 9	"	28723	Campbell & Titsworth, Lacombe	3 "	75	" "
" 9	"	28724	J. G. Pratt, Lacombe	3 "	1 00	G. F. & J. Galt, Winnipeg...
" 11	"	28725	R. Bruce Inglis Co., Edmonton	3 "	90	H. L. Johnson, Chilliwack, B.C.

SESSIONAL PAPER No. 14

NLAND REVENUE DEPARTMENT—Public Analyst Laboratory.

Inspectors Report.	Results of Analysis.			Opinion of the Chief Analyst.
	Direct readings of Saccharimeter.	Water loss on drying at 70°C.	Physical Characteristics	
R. W. EARL, INSPECTOR.				
....	+17·8	22·80	Golden brown, clear.....	Contains cane sugar; label on bottle reads 'Honey and Sugar Syrup.'
....	−12·4	22 60	Partly crystallized, yellow.	Genuine.
... ...	+16·0	13·80	Yellow, clear.....	Adulterated with cane sugar.
....	−17·0	22·40	Crystallized throughout, light yellow.	Genuine.
....	−16·9	21·60	Crystallized throughout, white.	"
....	− 3·7	24·60	Slightly crystallized, yellow.	"
....	−17·2	26·80	Light yellow, clear	" Water content high.
....	− 0·7	21·20	" "	"
....	−14·3	19·60	Partly crystallized, yellow.	"
.. ..	−18·5	19·40	Yellow, clear..... ...	"
.....	−16·5	17·20	Crystallized throughout, white.	"
....	−17·8	18·60	Light yellow, crystallized almost throughout.	"
....	−18·8	21·40	" "	"
....	−16·7	21·60	Slightly crystallized, dark yellow.	"
....	−18·1	22·20	Crystallized throughout, yellow.	"
....	+15·3	22·80	Yellow, clear.....	Adulterated with cane sugar.
....	−16·6	21·80	Partly crystallized, dark yellow.	Genuine.
... .	+18·9	25·40	Yellow, clear.....	Adulterated with cane sugar. Water content high.
....	−10·3	23·00	"	Genuine,
....	−22·0	26·80	Partly crystallized, yellow.	" Water content high.
R. W. FLETCHER, INSPECTOR.				
..... .	−17·8	26·00	Dark yellow. Clear.	Genuine. Water content high.
....	−12·3	23·60	Yellow. Crystallized almost throughout.	"
....	−14·5	24·00	Yellow. Crystallized almost throughout.	"
.. ..	− 7·5	21·40	Yellow. Partly crystallized.	"
....	−11·2	22·40	Yellow. Crystallized almost throughout.	"

TABLE I.—RECORD OF FOOD SAMPLES, HONEY, ANALYZED BY

Date of Collection.	Nature of Sample.	No. of Samples.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.
1907.						
			DISTRICT OF CALGARY—			
May 11	Honey.....	28726	Hudson Bay Co., Edmonton...	3 " ..	75	Hudsoon Bay Co., Winnipeg
" 13	"	28727	Duncan Bros. & Batters, Edmonton.	3 tin...	60	Not known..... ...
" 13	"	28728	Garieky & Sesalea, Edmonton..	3 bots..	60	Pacific Coast Syrup Co., Seattle, U.S.
" 13	"	28729	Hallier & Aldridge, Edmonton.	3 " ..	75	Brown & Co., Tothenham, Ont.
" 13	"	28730	C. W. Campbell, Edmonton...	3 " ..	1 00	Pacific Coast Syrup Co., Seattle, U.S.
" 13	"	28731	Matheson & Jacobson, Edmonton.	3 " ..	1 00	" " ..
" 13	"	28732	J. H. Morris & Co., Edmonton	3 " ..	60	G. A. Deadman, Brussels, Ont.
" 14	"	28733	D. H. L. Ghormley, Strathcona	3 " ..	60	Upton & Co., Hamilton, Ont.
" 14	"	28734	F. Cowles, Strathcona..... .	3 " ..	60	Unknown.....
" 14	"	28735	Cooke & Orr, Strathcona.....	3 " ..	1 20	Pacific Coast Syrup Co., Seattle, U.S.
" 14	"	28736	A. H. Richards & Co., Strathcona.	3 " ..	1 50	J. Tulmee & Co., Hamilton, Ont.
" 14	"	28737	A. G. Baahm, Strathcona.....	3 " ..	75	Upton & Co., Hamilton, Ont.
" 14	"	28738	C. Shugerman, Strathcona.....	3 " ..	75	John Stade, Chilliwack, B.C.
" 14	"	28739	Baxter & Co, Strathcona... ...	3 " ..	75	Upton & Co., Hamilton, Ont.
" 14	"	28740	Ross McDonald, Strathcona..	3 " ..	75	Pacific Coast Syrup Co., Seattle, U.S.
			DISTRICT OF BRITISH COLUMBIA—			
April 15	Honey.....	32022	C. E. Purner, Pender St., Vancouver.	2 jars...	60	Bishop & Co., Los Angelus, Cal., U.S.
" 16	"	32026	Marshall, Smith & Co., Ladner, B.C.	2 " ..	60	Pacific Coast Syrup Co., San Francisco, U.S.
" 16	"	32028	E. Hunt, Stevenson, B.C.....	2 " ..	50	T. W. Kimarire, Lulu Island, B.C.
" 18	"	32029	Frank Wright, Granville St., Vancouver.	3 " ..	75	W. Woodward, Ladner, B.C.
" 22	"	32036	A. H. Keepings, Keefer St., Vancouver.	2 bottles	60	Pacific Coast Syrup Co., San Francisco, U.S.
" 19	"	32048	Geo. Smith, Mount Pleasant, Vancouver.	3 jars...	45	San Diego Honey Co., 707 Sauroure St., San Francisco, U.S.
" 19	"	32049	H. O. Lee, Mount Pleasant, Vancouver.	1 qt.....	60	Garcia & Magini, San Francisco, U.S.
" 20	"	32050	The Direct Supply Co., Hastings St., Vancouver.	3 jars...	75	John Stade, Chilliwack, B.C.
" 22	"	32051	D. Beare Co., Hastings St., Vancouver.	3 " ..	75	H. L. Johnson, Chilliwack, B.C.
" 22	"	32052	Healy & Vicars, Keefer St., Vancouver.	2 " ..	50	Pacific Coast Syrup Co., San Francisco, U.S.

SESSIONAL PAPER No. 14

INLAND REVENUE DEPARTMENT—Public Analyst Laboratory.

Inspector's Report.	Result of Analysis.			Opinion of the Chief Analyst
	Direct reading of Saccharimeter.	Water loss on drying at 70° C.	Physical Characteristics.	
R. W. FLETCHER, INSPECTOR.—*Con.*				
.....	− 1·0	26·60	Pale yellow. Clear.....	Genuine Water content high. Adulterated with cane sugar.
.....	−11·8	22·80	Yellow. Partly crystallized.	Genuine.
.....	−15·4	21·00	Yellow. Clear.....	"
.....	−12·3	22·80	Yellow. Mostly crystallized.	"
.....	−17·4	23·40	Yellow. Crystallized almost throughout.	"
.....	−16·3	26·40	Dark yellow. Clear.	" Water content high.
.....	−13·2	21·80	Yellow. Clear.	"
.....	−13·9	23·20	Dark yellow. Crystallized throughout.	"
.....	−14·0	21·60	Pale yellow.	"
.....	−16·5	23·20	Yellow. Clear.	"
.....	−12·0	19·80	Pale yellow. Crystal lized throughout.	"
.....	−14·0	25·20	Yellow. Crystallized almost throughout.	" Water content high.
.....	−13·0	25·00	Yellow. Partly crystallized.	"
.....	−17·40	24·80	Brown. Partly crystallized.	"
.....	−17·0	27·20	Yellow. Mostly clear but contains a little comb.	" Water content high.
E. B. PARKINSON, INSPECTOR.				
Guaranteed pure by the manufacturer.	−14·9	21·20	Yellow, clear	Genuine.
"Wild Rose," Finest California Honey, pure.	18·4	24·20	" "	"
.....	−12·9	22·80	Yellow, crystallized, almost throughout.	"
White Clover honey.....	−15·0	20·40	Pale yellow, crystallized throughout.	"
"Wild Rose" Finest Californian Honey, pure.	−18·5	28·20	Yellow, clear.....	" Water content high.
"Wild Rose" Honey.....	−11·5	23·80	Dark yellow, crystallized almost throughout.	"
No brand ; no label	−16·4	21·80	Dark yellow, clear..	"
Pure honey.	−16·0	24·00	Yellow, partially crystallized.	"
"	−13·4	22·00	Dark yellow, partly crystallized.	"
"White Rose" Finest Californian Honey.	−17·4	24·00	Yellow, clear..	"

TABLE I.—RECORD OF FOOD SAMPLES, HONEY, ANALYZED BY

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.
1907.						
			DISTRICT OF BRITISH COLUMBIA—			
April 22	Honey	32053	Woodward's Dept. Store, Hastings St., Vancouver.	3 "	20	Garcia & Magini, San Francisco, U.S.
" 22	"	32054	J. Deal, Cordorva St., Vancouver.	2 "	60	W. H. McKinly, Vancouver, B.C.
" 22	"	32055	" "	3 "	45	Vendor
" 23	"	32056	LaBelle & Co., Westminster, St., Vancouver.	3 "	25	Garcia & Magini, San Francisco, U.S.
" 23	"	32057	B. B. Brown, Davie St., Vancouver.	3 "	75	John Stade, Chilliwack, B.C.
" 23	"	32058	A. J. Hawkes, Denman St., Vancouver.	2 "	60	Bishop & Co., Los Angeles, U.S.
" 24	"	32059	West End Grocery, New Westminster, B.C.	2 "	50	J. Reagh, Ladnor, B.C.
" 24	"	32060	Adams & Deans, New Westminster, B.C.	2 "	50	R. W. Keegan, Steveston, B.C.
" 25	"	32061	Bruder & Gruchy, Granville St., Vancouver.	1 "	35	Garcia & Magini, San Francisco, U.S.
" 29	"	32062	J. McArthur, Westminster St., Vancouver.	2 "	50	John Stade, Chilliwack, B.C.

INLAND REVENUE DEPARTMENT—Puplic Analyst Laboratory.

Inspector's Report.	Result of Analysis.			Opinion of the Chief Analyst.
	Direct reading of Saccharimeter.	Water loss on drying at 70° C.	Physical Characteristics.	
E. B. PARINSON, INSPECTOR.—*Con.*				
No brand or label.	−19·0	22·20	Yellow, partially crystallized.	Genuine.
Extra fine quality	+72·0	24·20	" "	Adulterated with glucose.
Made from comb honey by the vendor.	−14·4	22·40	Brown, clear	Genuine.
No brand or label.	−21·0	23·60	Dark yellow, partially crystallized.	"
.....	−13·8	18·20	Dark yellow, clear	"
Guaranteed pure by the manufacturer.	−18·0	19·80	Yellow, partially crystallized.	"
White Clover Brand. Warranted pure.	− 6·5	20·80	Pale yellow, clear	"
Pure honey	−12·0	20·40	Pale yellow, partially crystallized.	"
No brand and label.	−16·2	19·80	Yellow, mostly crystallized.	"
Pure honey	−18·4	22·00	Yellow, crystallized throughout.	"

APPENDIX L.

BULLETIN No. 146—DRUGS

Bismuth Subnitrate; Potassium Bromide; Phenacetin.

Ottawa, January 25, 1908.

W. J. Gerald, Esq.,
Deputy Minister of Inland Revenue

Sir,—I have the honour to report upon 196 samples of Drugs, collected in December last; and consisting of the following:—

Table I—Bismuth Subnitrate.....	55	samples.
" II—Potassium Bromide.....	57	"
" III—Phenacetin.....	84	"
Total.....	196	

These were obtained in each of the (14) inspectoral districts of the Dominion, and doubtless represent, very fairly, the character of the drugs named, as sold throughout Canada.

It is very gratifying to know that, in no case has anything which could be properly called adulteration been found.

Bismuth Subnitrate. (See Table I). The percentage of Bismuth has been determined by conversion to the oxide. Tests for Lead, Arsenic and Carbonic Acid have been carefully made. With exception of two samples (Nos. 26355 and 31562), the requirements of the British Pharmacopœia were fully met.

The two samples excepted are *Oxy-carbonate of Bismuth*, and are manifestly furnished as errors in dispensing. These two preparations of Bismuth (Subnitrate and Oxy-carbonate) are so similar in their medicinal value that the error is not a serious one. But such errors should not occur.

Potassium Bromide. (See Table II). The British Pharmacopœia describes this drug as required to be within *one per cent* of chemical purity; and to contain no trace of the heavy metals, or of Cyanides. In all these respects the whole of the 53 samples examined were found to be satisfactory.

Phenacetin. (See Table III). Six samples from each inspectoral district were examined as regards specific identity, and absence of Antifebrin (Acetanilide) and paraphenetidin. All were found to be of requisite purity.

The analytical work herein has been done by Mr. Lemoine and Mr. Valin of this staff.

I beg to recommend the publication of this report as Bulletin No. 146.

I have the honour to be, Sir,
Your obedient servant,

A. McGILL,
Chief Analyst.

TABLE

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cts.	Name and Address of Manufacturer or Furnisher as given by the Vendor.
1907.				Oz.	Cts.	
			District of Nova Scotia—			
Dec. 3.	Bismuth subnitrate..	27379	Jas. Walsh, Halifax, N.S.....	1½	35	National Drug Co., Halifax, N.S.
" 3.	" ..	27380	A. H. Buckley, Halifax, N.S .	1½	45	Unknown.. . . . .
" 3.	" ..	27381	National Drug, Halifax, N.S..	1½	27	Vendor ....
" 10.	" ..	27382	A. S. Hutchins, Liverpool	1½	45	National Drug Co., Halifax, N.S.
			District of Prince Edward Island—			
Dec. 4.	Bismuth subnitrate..	31205	Dr. J. McNeill, Summerside..	1½	45	National Drug Co., St. John, N.B.
" 4.	" ..	31206	A. W. P. Gourlie, Summerside	1½	38	" " ..
" 7.	" ..	31207	G. E. Hughes, Charlottetown.	1½	38	" " ..
" 7.	" ..	31208	Red Cross Pharmacy, Charlottetown.	1½	25	" " ..
			District of New Brunswick—			
Dec. 6.	Bismuth subnitrate..	29624	E. Clinton Brown, St. John, N.B.	1½	45	The National Drug Co., Ltd., St. John, N.B.
" 18.	" ..	29625	J. McD. Cooke, Moncton, N.B.	1½	38	" " ..
Jan. 4.	" ..	29626	Arthur J. Ryan, Fredericton, N.B.	1½	30	" " ..
" 7.	" ..	29627	Garden Bros., Woodstock, N.B.	1½	38	" " ..
			District of Quebec—			
Dec. 3.	Bismuth subnitrate..	26335	T. A. Peltier, 148 Notre Dame	1½	60	National Drug Co. .....
" 3.	" ..	26354	R. W. Williams, coin Notre Dame et Platon.	1½	38	" Montreal
" 3.	" ..	26355	T. A. Peltier, 148 Notre Dame	1½	90	" .....
" 3.	" ..	26357	L. P. Normand, 32 rue des Forges.	1½	30	" .....
			District of St. Hyacinthe—			
Dec. 12.	Bismuth subnitrate..	27930	Dr. P. A. Bédard, Drummondville.	1½	75	National Drug Co., Montreal.
" 2.	" ..	27931	Dr. Guay, St. Jean.....	1½	35	Not known.. ....
" 5.	" ..	27932	W. H. Griffith, Sherbrooke....	1½	50	National Drug Co., Montreal.
" 10.	" ..	27933	Dr. Sylvester, Sorel	1½	35	" " ..

I.

Inspector's Report.	Results of Analysis.				Opinion of the Chief Analyst.
	Bismuth Oxide.	Lead.	Arsenic.	Carbonate.	
	p. c.				
R. J. Waugh, Inspector.					
....	81·0	None...	None...	None...	Genuine.
....	80·7	" ...	" ...	" ...	"
....	80·9	" ...	" ...	" ...	"
....	81·0	" ...	" ...	" ...	"
T. Moore, Inspector.					
....	82·9	None...	None...	None...	Genuine.
... .	80·6	" ...	" ...	" ...	"
....	81·1	" ...	" ...	" ...	"
....	80·9	" ...	" ...	" ...	"
J. C. Ferguson, Inspector.					
....	81·4	None...	None...	None. .	Genuine.
From 1 lb. stock bottle.....	80·6	" ...	" ...	" ...	"
From stock bottle in store.....	81·0	" ...	" ...	" ...	"
" "	80·2	" ...	" ...	" ...	"
E. Beland, Inspector.					
....	80·4	None...	None...	None...	Genuine.
....	81·1	" ...	" ...	" ...	"
... .	80·8	" ...	" ...	Present.	CO_2 Approx., 9 p.c.; nitrate also present (Français).
... .	80·3	" ...	" ...	None...	Genuine.
J. C. Routeau, Inspector.					
....	80·7	None...	None...	None...	Genuine.
From 1 lb. package.....	80·6	" ...	" ...	" ...	"
....	80·3	" ...	" ...	" ...	"
.....4..	81·0	" ...	" ...	" ...	"

TABLE

Date of Collection.	Name of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cts.	Name and Address of Manufacturer or Furnisher as given by the Vendor.
1907.				Oz.		
			District of Montreal—			
Dec. 3.	Bismuth subnitrate..	31559	E. Ethier, Montreal.....	1½	35	Lyman-Knox Co., Montreal
" 5.	" ..	31562	Joseph Pigeon, Montreal.....	1½	38	Not known.....
" 5.	" ..	31566	A. Lebeau, Montreal.....	1½	75	Lyman, Sons & Co., Montreal.
" 11.	" ..	31567	S. Gilbert, St. Jerome, Que...	1½	30	Lyman-Knox Co.....
			District of Ottawa—			
Dec. 9.	Bismuth subnitrate..	34071	F. W. Day, Ottawa.....	1½	45	E. B. Shuttleworth, Chem. Co., Toronto.
" 9.	" ..	34072	Weldon J. Graham, Ottawa ..	1½	60	Burroughs, Welcome & Co., London, England.
" 13.	" ..	34073	C. A. MacHaffie, Cornwall ...	1½	40	Lyman, Sons & Co., Montreal.
" 17.	" ..	34074	Johnston's Drug Store, Arnprior.	1½	75	National Drug Co., Ottawa
			District of Kingston—			
Dec. 3.	Bismuth subnitrate..	32497	F. C. Clarke, Belleville.....	1½	45	National Drug Co., Montreal.
" 3.	" ..	32498	D. M. Waters, Belleville.....	1½	38	Mallinckrodt, N.Y.....
" 4.	" ..	32499	S. H. Macdonald, Peterborough	1½	30	Lyman and Sons, Montreal.
" 4.	" ..	32500	J. D. Tully, Peterborough....	1½	30	Howards, England.....
			District of Toronto—			
Dec. 11.	Bismuth subnitrate..	33387	W. J. MacFadden, Orillia....	1½	35	Elliot & Co. of Nat. Drug Co., Toronto.
" 12.	" ..	33388	D. H. MacLaren, Barrie.....	1½	50	Nat. Drug & Chem. Co., Montreal.
" 12.	" ..	33389	F. G. Muxlow, Meaford.....	1½	30	Howard & Sons, E. C.....
" 17.	" ..	33390	T. Steveson, Orangeville.....	1½	30	Lyman Bros., Toronto.....
			District of London—			
Nov. 29.	Bismuth subnitrate..	30443	John Roberts, Seaforth.....	1½	30	Elliot & Co., Toronto.....
Dec. 20.	" ..	35011	Clark Bros., Berlin.....	1½	60	Howard & Sons.....
" 24.	" ..	35012	H. O. Fleming, Windsor.....	1½	20	Merck, Darmstadt.....

SESSIONAL PAPER No. 14

I—*Continued.*

Inspector's Report.	Results of Analysis.				Opinion of the Chief Analyst.
	Bismuth Oxide.	Lead.	Arsenic.	Carbonate.	
	p. c.				
J. J. Costigan, Inspector.					
....	81·4	None...	None...	None...	Genuine.
....	82·0	" ...	" ...	Present.	CO_2 Approx., 9 p.c.; nitrate also present.
....	80·0	" ...	" ...	None...	Genuine.
....	80·4	" ..	" ...	" ...	"
J. A. Rickey, Inspector.					
....	80·0	None...	None...	None...	Genuine.
....	80·2	" ...	" ...	" ...	"
....	80·7	" ...	" ...	" ...	"
. . ..	79·8	" ...	" ...	" ...	"
J. Hogan, Inspector.					
....	80·4	None...	None...	None...	Genuine.
....	80·0	" ...	" ...	" ...	"
....	80·5	" ...	" ...	" ...	"
....	81·0	" ...	" ...	" ...	"
H. J. Dager, Inspector.					
Sample taken from stock bottle on shelf.	80·9	None...	None...	None...	Genuine.
" " ..	80·4	" ...	" ...	" ...	"
Original was labelled Howard & Sons, C. E.	79·8	" ...	" ...	" ...	"
Sample taken from stock bottle.	80·9	" ...	" ...	" ...	"
S. Kidd, Inspector.					
....	82·0	None...	None...	None...	Genuine.
Sample taken from stock bottle.	80 0	" ...	" ...	" ...	"
Vendor keeps sample in stock bottle. Buys in 1 oz. pkgs.	80·8	" ...	" ...	" ...	"

TABLE

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cts.	Name and Address of Manufacturer or Furnisher as given by the Vendor.
1907.				Oz.	Cts.	
			District of Manitoba—			
Dec. 10.	Bismuth subnitrate.	25656	G. McCulloch, Brandon	1½	30	Lyman Bros., Toronto.
" 10.	"	25664	Kennedy's Pharmacy, Brandon	1½	30	The Bole Drug Co., Winnipeg, Man.
" 12.	"	25682	M. Ruckle, Winnipeg	1½	35	" "
" 16.	"	25695	Dunkin's Drug Store, Portage la Prairie	1½	75	Not given.
			District of Calgary—			
Jan. 8.	Bismuth subnitrate.	28842	Bole Drug Co., Calgary	1½	30	Nat. Drug Co., Montreal.
" 8.	"	28843	Oliver Bros., Calgary	1½	30	" "
" 8.	"	28844	Curry & Cope, Calgary	1½	30	" "
" 8.	"	28845	W. McLean, Calgary	1½	30	" "
			District of Vancouver—			
Dec. 17.	Bismuth subnitrate.	32187	Woods Pharmacy, Vancouver.	1½	45	Henderson Bros., Vancouver.
" 17.	"	32188	J. W. Morrow, Vancouver	1½	50	W. J. Bush & Co., London, Eng.
" 17.	"	32189	Woodward's Dept. Stores, Vancouver	1½	40	Henderson Bros., Vancouver.
" 17.	"	32190	The McDowell, Atkins, Watkins Co	1½	70	" "
			District of Victoria—			
Dec. 12. 1908.	Bismuth subnitrate.	34801	E. Pimbury & Co., Nanaimo, B.C.	1½	35	Lyman Bros., Toronto.
Jan. 28.	"	34834	D. E. Campbell, Victoria, B.C.	1½	35	Malmckrodt Chem. Co., N.Y.
" 28.	"	34837	Terry & Marett, "	1½	35	" "
" 28.	"	34840	George Moran, "	1½	35	Nat. Drug Co., Montreal.

SESSIONAL PAPER No. 14

I—*Concluded.*

Inspectors' Report.	Results of Analysis.				Opinion of the Chief Analyst.
	Bismuth Oxide.	Lead.	Arsenic.	Carbonate.	
	p. c.				
A. C. Larivière, Inspector.					
.....	79·7	None...	None...	None...	Genuine.
.....	80·2	" ...	" ...	" ...	"
.....	80·7	" ...	" ...	" ...	"
.....	80·5	" ...	" ...	" ...	"
R. W. Fletcher, Inspector.					
.....	81·0	None...	None...	None...	Genuine.
.....	81·3	" ...	" ...	" ..	"
.....	80·3	" ...	" ...	" ...	"
.....	82·0	" ..	" ...	" ...	"
E. B. Parkinson, Inspector.					
.....	80·3	None...	None...	None...	Genuine.
.....	79·3	" ...	" ...	" ...	"
.....	80·3	" ...	" ...	" ...	"
.....	81·8	" ...	" ...	" ...	"
D. O. Sullivan, Inspector.					
.....	80·0	None...	None...	None...	Genuine.
.....	79·9	" ...	" ..	" ...	"
.....	79·8	" ...	" ...	" ...	"
.....	80·4	" ...	" ...	" ...	"

TABLE II.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cts.	Name and Address of Manufacturer or Furnisher as given by the Vendor.	Inspector's Report.	Results of Analysis. $\frac{N}{10}$ $AgNO_3$ cc. per gramme.	Results of Analysis. Potassium Bromide.	Opinion of the Chief Analyst.
1907.				Oz.	Cts.				p.c.	
District of Nova Scotia—R. J. Waugh, Inspector.										
Dec. 3.	Potassium Bromide.	27383	Jas. Walsh, Halifax, N.S.	1½	15	National Drug Co., Halifax, N.S.		83·6	99·48	Pharmacopœally, pure.
" 3.	" ..	27384	A. H. Buckley " ..	1½	5	Unknown		84·2	100·29	" "
" 3.	" ..	27385	Nat. Drug Co. " ..	1½	15	Powers & Weightman, Philadelphia.		84·6	100·67	" "
" 4	" ..	27386	M. P. McCaffery " ..	1½	30	Can. Drug Co., St. John, N.B.		84·2	100·29	" "
District of Prince Edward Island—T. Moore, Inspector.										
Dec. 4.	Potassium Bromide.	31209	Dr. J. McNeill, Summerside.	1½	10	Nat. Drug Co., Halifax, N.S.		84·0	99·96	Pharmacopœally, pure.
" 4.	" ..	31210	P. N. Enman, Summerside.	1½	15	" " ..		84·0	99·96	" "
" 4.	" ..	31211	A. W. Reddin, Charlottetown.	1½	15	Lyman & Sons, Montreal..		83·6	99·48	" "
" 4.	" ..	31212	G. E. Hughes, Charlottetown.	1½	15	Nat. Drug Co., Halifax, N.S.		83·8	99·72	" "
District of New Brunswick—J. C. Ferguson, Inspector.										
Dec. 6.	Potassium Bromide.	29628	W. Hawker & Son, St. John, N.B.	1½	30	Evans & Son, Montreal....		84·6	100·67	Pharmacopœally, pure.
" 19.	" ..	29629	A. E. Shaw, Newcastle, N.B.	1½	15	Nat. Drug Co., Ltd., St. John, N.B.		84·4	100·43	" "
" 18.	" ..	29630	Francis McKay, Moncton.	1½	15	Powers & Weightman, Philadelphia.		84·6	100·67	" "
Jan. 7.	" ..	29631	The Sheasgreen Drug Co., Woodstock, N.B.	1½	15	Nat. Drug & Chem. Co., Ltd., St. John, N.B.	From stock bottle in store.	84·0	99·96	" "

District of Quebec—E. Beland, Inspector.

Dec. 3.	Potassium Bromide.	26358	R. W. Williams, Coin Notre-Dame et Peaton.	1½	15	Lyman Knox Co.		84·6	100·67	Pharmacopœally, pure.
" 3.	" ..	26359	T. A. Peltier, 148 Notre-Dame.	1½	15	National Co.		84 0	99·96	" "
" 4.	" ..	26360	L. P. Normand, 32 Rue des Forges.	1½	12	Lyman Son Co.		84·6	100 67	" "
" 4.	" ..	26361	" " ..	1½	5			84·6	100·67	" "

District of St. Hyacinthe—J. C. Roulcau, Inspector.

Dec. 3.	Potassium Bromide.	27935	Dr. O. Demers, Farnham.	1½	15	Lyman Knox, Montreal.		84·4	100·43	Pharmacopœally, pure.
" 5.	" ..	27936	F. D. Hewitt, Sherbrooke.	1½	15	National Drug " ..		84·6	100·67	" "
" 6.	" ..	27937	Dr. Laurendeau, Victoriaville.	1½	15	Not known		84·2	100·29	" "
" 11.	" ..	27938	Dr. P. E. Gelinas, Pierreville.	1½	15	Nat. Drug, Montreal.		84·4	100·43	" "

District of Montreal—J. J. Costigan, Inspector.

Dec. 3.	Potassium Bromide.	31560	E. Ethier, Montreal.	1½	15	Lyman Knox Co., Montreal		84·4	100·43	Pharmacopœally, pure.
" 5.	" ..	31563	Joseph Pigeon, Montreal.	1½	15	Not known		84·4	100·43	" "
" 11.	" ..	31568	S. Gilbert, St. Jerome, P.Q.	1½	10	Kent & Stevenson, Montreal.		84·6	100·67	" "
" 13.	" ..	31570	J. T. Gaudet, Juliette	1½	15			84·6	100·67	" "

District of Ottawa—J. A. Rickey, Inspector.

Dec. 9.	Potassium Bromide.	34075	A. J. Brownlee, Ottawa.	1½	15	Lyman Sons		83·8	99·72	Pharmacopœally, pure.
" 9.	" ..	34076	R. M. Arbuthnot, Ottawa.	1½	15	Nat. Drug & Chem. Co.		84·0	99·96	" "
" 13.	" ..	34077	Medical Hall Co., Cornwall.	1½	15	Not known		84·6	100·67	" "
" 17.	" ..	34078	C. A. Ramshaw, Arnprior.	1½	15	"		83·8	99·72	" "

District of Kingston—J. Hogan, Inspector.

Dec. 3.	Potassium Bromide.	33057	F. C. Clark, Belleville,	1½	15	Nat. Drug Co., Montreal.		84·6	100·67	Pharmacopœally, pure.
" 3.	" ..	33058	D. M. Waters, Belleville.	1½	15	Lyman, Montreal		84·2	100·29	" "
4.	" ..	33059	S. H. MacDonald, Peterborough.	1½	15	Lyman Sons, Montreal.		84·6	100·67	" "
4.	" ..	33060	J. D. Tully, Peterborough.	1½	15	Nat. Drug Co., Montreal.		84·2	100·29	" "

TABLE II.—*Concluded.*

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cts.	Name and Address of Manufacturer or Furnisher as given by the Vendor.	Inspector's Report.	Results of Analysis. Ag. NO_3 $\frac{N}{10}$ cc. per gramme.	Results of Analysis. Potassium Bromide.	Opinion of the Chief Analyst.	
1907.				Oz.	cts.				p.c.		
District of Toronto—H. J. Dager, Inspector.											
Dec. 12.	Potassium Bromide .	33391	Wm. Crossland, Barrie....	1½	15	Drug Trading Co., Toronto	Sample taken from stock bottle.	83·8	99·72	Pharmacopœally, pure	
" 13.	" ..	33392	Thos. McConoll, Meaford.	1½	15	Dom. Drug Co., Hamilton.	" "	84.4	100·43	"	"
" 18.	" ..	33393	S. C. Hatton, Owen Sound	1½	15	Lyman, Knox and Clarkson, Toronto.	Sample taken from original package	84·2	100·29	"	"
" 19	" ..	33394	G. A. Ramsden, Georgetown	1½	15	Nat. Drug Co., Toronto...	Sample taken from stock bottle.	83·8	99·72	"	"
District of London—T. Kidd, Inspector and H. J. Dager, Acting Inspector.											
Nov. 30.	Potassium Bromide .	30446	S. E. Hicks, Druggist.....	1½	25	Lyman Brothers, Toronto.		84·6	100·67	Pharmacopœally, pure.	
Dec. 2.	" ..	30452	A. McRea, Stratford....	1½	15	Dom. Drug Co., Hamilton.		84·6	100·67	"	"
" 6.	" ..	30462	Charles Aberhart, Seaforth	1½	30	Elliot & Co., Toronto		84·4	100·43	"	"
" 26.	" ..	35009	S. F. Park & Co., Chatham	1½	15	Dom. Drug Co., Hamilton.	Sample taken from stock bottle.	83·8	99·72	"	"
" 27.	" ..	35010	J. E. Platt, London.....	1½	15	Nat. Drug Co., London...	Sample taken from stock bottle. Vendor says it is pure.	83·8	99·72	"	"
District of Manitoba—A. C. Lariviere, Inspector.											
Dec. 10	Potassium Bromide .	25657	G. McCulloch, Brandon...	1½	30	Lyman Brothers, Toronto.		84·0	99·96	Pharmacopœally, pure.	
" 10.	" ..	25665	Kennedy's Pharmacy, Brandon.	1½	25	The Bole Drug Co., Winnipeg.		84·0	99 96	"	"
" 12.	" ..	25683	M. Ruckee, Winnipeg.....	1½	15	Not given		84·0	99·96	"	"
" 16	" ..	25696	Dunkin's Drug Store, Portage la Prairie.	1½	15	"		84·2	100·29	"	"

District of Calgary—R. W. Fletcher, Inspector.

Jan. 8.	Potassium Bromide .	28846	Bole Drug Co., Calgary...	1½	10	Unknown		84·0	99·96	Pharmacopœally, pure.	
" 8.	" ..	28847	Oliver Bros., Calgary.....	1½	30	Nat. Drug Co., Montreal..		84·2	100·29	"	"
" 8.	" ..	28848	Curry & Cope, Calgary....	1½	10	" " ..		84·0	99·96	"	"
" 8.	" ..	28849	W. McLean, Calgary.....	1½	10	" " ..		84·2	100·29	"	"

District of Vancouver—E. B. Parkinson, Inspector.

Dec. 17.	Potassium Bromide .	32191	Woods' Pharmacy, Vancouver.	1½	25	Henderson Bros., Vancouver.		84·2	100·29	Pharmacopœally, pure.	
" 17.	" ..	32192	J. W. Morrow, Vancouver.	1½	35	W. J. Bush & Co., London, Eng.		84·0	99·96	"	"
" 17.	" ..	32193	Woodward Dept. Stores, Vancouver.	1½	15	Henderson Bros., Vancouver.		84·0	99·96	"	"
" 17.	" ..	32194	The McDowell, Atkins, Watkins Co., Vancouver.	1½	25	" "		83·8	99·72	"	"

District of Victoria—D. O. Sullivan, Inspector.

Dec. 12. 1908.	Potassium Bromide .	34803	E. Pimbury & Co., Nanimo, B.C.	1½	25	Nat. Drug & Chem. Co., Canada.	.....	83·6	99·48	Pharmacopœally, pure.	
Jan. 28.	" ..	34835	D. E. Campbell, Victoria, B.C.	1½	30	Lyman Sons, Montreal....	.....	84·0	99·96	"	"
" 28.	" ..	34838	Terry & Marett, Victoria, B.C.	1½	25	" "	.....	84·4	100·41	"	"
" 28.	" ..	34841	Geo. Morison, Victoria, B.C.	1½	50	Nat. Drug Co., Montreal.	.....	84·2	100·19		"

TABLE III.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cts.	Name and Address Manufacturer or Furnisher as given by the Vendor.	Inspector's Report.	Results of Analysis. Identification Test.	Results of Analysis. Antifebrine (Acetanilide)	Results of Analysis. Paraphenetidine.	Opinion of the Chief Analyst.
1907.				Oz.	$ cts.						
District of Nova Scotia—R. J. Waugh, Inspector.											
Dec. 3.	Phenacetin.....	27387	National Drugs, Halifax...	1½	0 30	Basle Chem. Works Switzerland.		Present.	None.	None.	Genuine.
" 4.	"	27388	C. A. Barnstead " ..	1½	0 35	Unknown.....		"	"	"	"
" 4.	"	27389	C. S. Huggins " ..	1½	0 53	F. Bayer, Elberfeld, Ger..		"	"	"	"
" 4.	"	27390	A. W. Cameron " ..	1½	0 55	" "		"	"	"	"
" 4.	"	27391	M. P. Caffery " ..	1½	0 55	Nat. Drug Co		"	"	"	"
" 5.	" ...	27392	Irwin & Sons " ..	1½	0 75	F. Bayer, Elberfeld, Ger..		"	"	"	"
District of Prince Edward Island—T. Moore, Inspector.											
Dec. 3.	Phenacetin.....	31213	Johnson & Johnson, Charlottetown.	1½	0 38	E, Merck, Germany.		Present.	None.	None.	Genuine.
" 4.	"	31214	A. W. P. Gourlie, Summerside.	1½	0 45	Nat. Drug Co., St. John, N.B.		"	"	"	"
" 5.	"	31215	Jardine & Bernard, Kensington.	1½	0 50	C. F. Boebringer & Sons, Germany.		"	"	"	"
" 5.	"	31216	E. Keir, Kensington.....	1½	0 45	E. Merck, Germany... ..		"	"	"	"
" 7.	"	31217	A. W. Reddin, Charlottetown.	1½	0 45	Bayer & Co., Elberfeld, Ger		"	"	"	"
" 9.	"	31218	C. D. Rankin, Charlottet'n	1½	0 60	Evans Sons, Lescher & Webb, Liverpool, G.B.		"	"	"	"

District of New Brunswick—J. C. Ferguson, Inspector.

Dec. 3.	Phenacetin.....	29632	The Nat. Drug and Chem. Co., Ltd., St. John, N.B.	3	1 50	Fred. Bayer, Elberfeld,Ger	No. 184 on package.....	Present.	None.	None.	Genuine.
" 12.	"	29633	Geo. A. Moore "	1½	0 60	" "	Sample taken from original package.	"	"	"	"
" 18.	" bulk.. .	29634	Fairweather Bros., Moncton, N.B.	1½	0 30	" "	" " ..	"	"	"	"
" 21.	"	29635	A. W. G. McDonald,Campbellton, N.B.	1½	0 75	" "	" " ..	"	"	"	"
Jan. 4.	" Merck's.	29636	Alonzo Staples, Frederict'n, N.B.	1½	0 50	The Can. Drug Co., Ltd., St. John, N.B.	From stock, bottle, Mercks, Germany.	"	"	"	"
" 7.	" bulk....	29337	E. W. Mair, Woodstock, N.B.	1½	0 30	E. Merck, Darmstadt, Ger.	From original package, on package, made in Ger....	"	"	"	"

District of Quebec—E. Beland, Inspector.

Dec. 3.	Phenacetin.....	26362	R. W. Williams, coin Notre Dame et Platon.	1½	0 40	Lyman Knox.....	....	Present.	None.	None.	Genuine.
" 3.	"	26363	S. A. Peltier, 148 N. Dame	1½	0 25	"	....	"	"	"	"
" 4.	"	26364	L. P. Normand, 32 rue des Forges.	1½	0 20	Lyman Sons Co..... ..	.....	"	"	"	"
" 11.	"	26365	O. T. Dion, Levis.....	1½	0 75	Bayer.....	....	"	"	"	"
" 13.	"	26376	W. Brunet et Cie, Quebec.	3	1 05	"	.. . .	"	"	"	"
" 13.	"	26377	L. E. Martel "	3	0 65	"	....	"	"	"	"

District of St. Hyacinthe—J. C. Rouleau, Inspector.

Dec. 3.	Phenacetin.....	27939	Dr. O. Demers, Farnham..	1½	0 40	Polson, Kingston, Ont.....	Box marked Para-acetphenetidin powdered, made in Switzerland, 35268.	Present.	None.	None.	Genuine.
" 4.	"	27940	Dr. G. A. Coderre, Megantic.	1½	0 75	Lyman Knox, Montreal...	Box marked No. 400086, T. Bayer & Co.	"	"	"	"
" 4.	" .. .	27941	" "	1½	0 60	" " ..	Box marked Para-acetphenetidin, E. Merck, Germany...	"	"	"	"
" 4.	"	27942	J. C. Sutherland,Richmond	1½	0 37	....		"	"	"	"
" 6.	"	27943	Dr. J. P. H. Massicotte, Victoriaville.	1½	0 75	Dr. Peltier, Victoriaville..	Jar marked Phenacetme...	"	"	"	"
" 10.	"	27944	P. E. Chevalier, Sorel.....	1½	0 45	Not known.....	.. ..	"	"	"	"

14—14½

TABLE III—*Continued.*

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher as given by the Vendor.	Inspector's Report.	Results of Analysis.			Opinion of the Chief Analyst.
				Quantity.	Cts.			Identification Test.	Antifebrine (Acetanilide)	Paraphenetidine.	
1907.				Oz.	$ cts.						
District of Montreal—J. J. Costigan, Inspector.											
Dec. 3.	Phenacetin.....	31561	E. Ethier, Montreal.	1½	0 58	Lyman Knox & Co., Montreal.	.....	Present.	None.	None.	Genuine.
" 5.	"	31564	Joseph Pigeon, Montreal..	1½	0 30	Not known.....	.....	"	"	"	"
" 5.	"	31565	A. Lebeau " ..	1½	0 75	Lyman Sons Co., Montreal	.....	"	"	"	"
" 11.	"	31569	E. N. Fournier, St.Jérome, P.Q.	1½	0 40	Nat. Drug and Chem. Co..	.....	"	"	"	"
" 16.	"	31571	P. McCormack, Montreal..	1½	0 40	" " ..	.....	"	"	"	"
" 16.	"	31572	J. A. Nicolle " ..	1½	0 40	.....	.....	"	"	"	"
District of Ottawa—J. A. Rickey, Inspector.											
Dec. 9.	Phenacetin.....	34079	F. W. Day, Ottawa.....	1½	0 45	Lyman Sons.....	German Phenacetin.....	Present.	None.	None.	Genuine.
" 10.	" ...	34080	Wm. A. Lloyd, Ottawa...	1½	0 60	Bayer & Co., Elberfeld, Ger.	.....	"	"	"	"
" 10.	"	34081	E. D. Story, Ottawa.....	1½	0 75	Burgoyne Burbeidges & Co	.....	"	"	"	"
" 11.	"	34082	Dr. A. Robillard & Son, Ott'a.	1½	0 75	Bayer, Elberfeld, Germany	Box marked the original product.	"	"	"	"
" 13.	"	34083	E. H. Brown, Cornwall...	1½	0 40	Bayer, Paris	.....	"	"	"	"
" 17	"	34084	A. T. Budd, Arnprior.....	1½	0 75	Bayer, Germany.....	.....	"	"	"	"

District of Kingston—J. H. Hogan, Inspector.

Dec. 3	Phenacetin	33050	G. Watson, Port Hope	1½	0	60			Present.	None.	None.	Genuine.
" 3	"	33051	H. C. Clark, Belleville	1½	0	60	Boekinger & Soncher, Ger.		"	"	"	"
" 3	"	33053	D. M. Waters, Belleville	1½	0	38	C. F. Boekinger & Soncher		"	"	"	"
" 3	"	33054	H. W. Mitchell, Port Hope	1½	0	50	Mercks		"	"	"	"
" 3	"	33055	S. H. Macdonald, Peterboro	1½	0	50	Lyman & Son, Montreal		"	"	"	"
" 3	"	33056	J. D. Tully, Peterboro	1½	0	75	Bayer		"	"	"	"

District of Toronto—H. J. Dager, Inspector.

Dec. 9	Phenacetin	33381	C. A. Nettleton, Penetanguishene.	1½	0	50	Basle Chem. Works, Switz.	Sample sold as Phenacetin.	Present.	None.	None.	Genuine.
" 10	"	33382	J. S. Fraleigh, Midland	1½	0	75	Dom. Drug Co., Hamilton		"	"	"	"
" 11	"	33383	H. Cook & Co., Orillia	1½	0	75	Lyman Bros., Toronto	Vendor said it was parceled to him from bulk with no label attached.	"	"	"	"
" 13	"	33384	A. H. Johnson, Collingwood	1½	0	50	Hoffman & Laroche Co.	Sample taken from original package.	"	"	"	"
" 18	"	33385	Parker & Co., Owen Sound	1½	0	50	F. Bayer & Co., Elberfeld	" "	"	"	"	"
" 19	"	33386	A. C. Cook, Brampton	1½	0	50	E. Merck, Darmstadt	" "	"	"	"	"

District of London—T. Kidd, Inspector, and H. J. Dager, Acting Inspector.

Dec. 2	Phenacetin	30451	E. C. Nasmith, Stratford	1½	0	30	E. Merck, Germany		Present.	None.	None.	Genuine.
" 4	"	30456	J. E. Hovey, Clinton	1½	0	60	Not known	Brand: Elberfeld Bayer	"	"	"	"
" 6	"	30461	Chas. Aberhart, Seaforth	1½	0	60	Lyman Bros., Toronto		"	"	"	"
" 23	"	35006	J. H. Nasmyth & Co., Woodstock	1½	0	35	Drug Trading Co., Toronto	Vendor purchased sample in original boxes labeled, Para-acetphenetidine powder made in Switzl'd.	"	"	"	"
" 26	"	35007	C. H. Gunn & Co., Chatham	1½	0	45	Merck & Co., Darmstadt	Sample taken from stock bottle.	"	"	"	"
" 27	"	35008	W. T. Strong, London	1½	0	75	" " "	" "	"	"	"	"

TABLE III—*Concluded.*

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cts.	Name and Address of Manufacturer or Furnisher as given by the Vendor.	Inspector's Report.	Results of Analysis. Identification Test.	Results of Analysis. Antifebrine (Acetanilide)	Results of Analysis. Paraphenetidine.	Opinion of the Chief Analyst.
				Oz.	$ cts.						
District of Manitoba—A. C. Larivière, Inspector.											
Dec. 10.	Phenacetin	25658	G. McCulloch, Red Cross Drug Co., Brandon.	1½	0 75	E. Merck, Darmstadt, Ger.		Present.	None.	None.	Genuine.
" 10.	"	25666	Kennedy's Pharmacy, Brandon.	1½	0 60	" "		"	"	"	"
" 12.	"	25684	M. Ruckee, Winnipeg	1½	0 40	The Bole Drug Co., Winnipeg		"	"	"	"
" 16.	"	25697	Cowan's Drug Store, Portage la Prairie	1½	0 75	Not given		"	"	"	"
" 16.	"	25700	J. K. Hall, Portage la Prairie	1½	0 75	E. Merck, Darmstadt, Ger.		"	"	"	"
" 18.	"	25848	Harrison Bros., Winnipeg.	1½	0 45	Not given		"	"	"	"
District of Calgary—R. W. Fletcher, Inspector.											
Jan. 8.	Phenacetin	28850	O. H. Bott, Calgary	1½	0 30	E. Merck, Darmstadt		Present.	None.	None.	Genuine.
" 8.	"	28851	Boll Drug Co., Calgary	1½	0 30	Unknown		"	"	"	"
" 8.	"	28852	Oliver Bros., Calgary	1½	0 30	Bayer & Co., Germany		"	"	"	"
" 8.	"	28853	Curry & Cope, Calgary	1½	0 30	" "		"	"	"	"
" 8.	"	28854	C. A. Wallace, Calgary	1½	0 30	" "		"	"	"	"
" 8.	"	28855	W. McLean, Calgary	1½	0 30	" "		"	"	"	"

District of Vancouver—E. B. Parkinson, Inspector.

Dec. 17.	Phenacetin.. ...	32195	Wood's Pharmacy, Vancouver.	1½	0 60	The Dom. Drug & Chem. Co., Hamilton.	.....	Present.	None.	None.	Genuine.
" 17.	"	32196	J. W. Morrow, Vancouver	1½	0 75	Henderson Bros, Vancouv'r	....	"	"	"	"
" 17.	"	32197	Woodward's Dept. Stores, Vancouver.	1½	0 75	Dom. Drug and Chem. Co., Hamilton..	.....	"	"	"	"
" 17.	"	32198	TheMcDowell Atkins Watkins Co.	1½	0 85	J. D. Riedel, Berlin, Ger..	....	"	"	"	"
" 17.	"	32199	The Red Cross Drug Store, Vancouver.	1½	0 60	Friede Bayer & Co., Elberfeld, Prussia.	....	"	"	"	"
" 17.	"	32200	Terry & Marett, Vancouver	1½	0 75	F. Hoffman, Laroche & Co., Basil, Switzerland.	....	"	"	"	"

District of Victoria—D. O. Sullivan, Inspector.

Dec. 12. 1908.	Phenacetin.. ..	34802	E. Pimbury & Co., Nanaimo, B.C.	1½	0 25	Henderson Bros., Vancouver.	.....	Present.	None.	None.	Genuine.
Jan. 28.	"	34836	D. E. Campbell, Victoria, B.C.	1½	0 90	Fred. Bayer & Co., Elberfeld, Ger.	....	"	"	"	"
" 28.	" . ..	34839	Terry & Marett, Victoria, B.C.	1½	0 50	Lyman & Sons, Montreal..	....	"	"	"	"
" 28.	"	34842	G. A. Fraser, Victoria, B.C.	1½	0 60	Fred. Bayer & Co., Elberfeld, Ger.	... .	"	"	"	"
" 28	"	34843	Hall & Co., "	1½	1 00	" "	... .	"	"	"	"
" 28.	"	34844	Geo. Morrison, "	1½	0 50	" "	....	"	"	"	"

APPENDIX M.

BULLETIN No. 147—LARD

OTTAWA, February 3, 1908.

W. J. GERALD, Esq.,
Deputy Minister of Inland Revenue.

SIR,—I beg to send you, herewith, a tabular statement regarding the collection and examination of 140 samples of Lard, obtained throughout the Dominion in December last.

The following synopsis gives the details by Inspectoral Districts :—

—	Genuine.	Doubtful.	Adulterated.	Compound.	Total.
Nova Scotia	9	1	0	0	10
Prince Edward Island	7	2	0	1	10
New Brunswick	7	3	0	0	10
Quebec	10	0	0	0	10
St. Hyacinthe	8	1	0	1	10
Montreal	10	0	0	0	10
Ottawa	9	0	1	0	10
Kingston	10	0	0	0	10
Toronto	10	0	0	0	10
London	10	0	0	0	10
Manitoba	10	0	0	0	10
Calgary	10	0	0	0	10
Vancouver	9	0	1	0	10
Victoria	10	0	0	0	10
Total	129	7	2	2	140

Ninety-two per cent of the samples examined are genuine; and ninety-three (93) per cent of the samples *sold as genuine*, are found to be so.

Only two (2) samples are classified as adulterated. Among those samples (seven in number) which I have called doubtful, it may be that admixture, amounting to adulteration, exists in one or two cases; but the results of analysis are sufficiently indecisive to warrant me in withholding definite judgment. The amount of foreign matter is either very trifling, or the characteristic constants which we possess admit of interpretation favourable to the vendor; although doubtfully so.

It is to be regretted that a definite standard, capable of being expressed in numbers, does not exist for Lard. It is well understood that this article is essentially the fat of the hog, and should contain mere traces of other ingredients; but just what these other ingredients may be, and at what point the 'traces' may become large enough to be taken into account, are points which remain unsettled.

The following definitions for Lard, became legal for the district of Columbia in 1906, and have since been accepted by several of the States of the Union.

1. *Lard* is the rendered fresh fat from hogs in good health at the time of slaughter, is clean, free from rancidity, and contains, necessarily incorporated in the process of rendering, not more than one (1) per cent of substances other than fatty acids and fat.

2. *Leaf Lard* is lard rendered at moderately high temperature from the internal fat of the abdomen of the hog, excluding that adherent to the intestine, and has an Iodine number not greater than sixty (60).

3. *Neutral Lard* is lard rendered at low temperatures.

These definitions are satisfactory, so far as they go; but they are by no means as full and exact as could be wished.

The last systematic inspection of lard was made in 1889; and the results were published as Bulletin No. 7 of this Department.

109 samples were examined, of which only 35 were certainly Canadian. Of these, three samples were adulterated. Of 60 samples known to be of United States origin, a majority coutained cotton seed oil, without acknowledgment.

No objection, on the ground of healthfulness, can be taken to the use of purified cotton seed oil; but, the fact of admixture should, of course, be distinctly stated on the label. The same may be said of beef tallow.

I beg to recommend the publication of this report, as Bulletin No. 147.

I have the honour to be, Sir,
Your obedient servant,

A. McGILL,
Chief Analyst.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by the Vendor.
1907.						
			DISTRICT OF NOVA SCOTIA—			
Dec. 3	Lard	33466	J. L. Archibald & Son, Halifax, N.S.	1½ lbs.	26	Davis & Fraser, Halifax
" 3	"	33467	City Provision Store, Halifax, N.S.	1½ "	23	John Morrell Co., U.S.
" 3	"	33468	W. J. Forristall, Halifax. N S.	1½ "	27	Swift's Co., U.S.A.
" 3	"	33469	T. Brown, Halifax, N.S.	1½ "	27	Cudahy Packing Co., U.S.A.
" 3	"	33470	Jas. A. Leaman & Co., Halifax, N.S.	1½ "	23	Vendor
Dec. 4	"	33471	W. A. Maling & Co., Halifax, N.S.	1½ "	23	"
" 4	"	33472	Creig & Hodgson, Halifax, N.S.	1½ "	24	Swift's, U.S.A.
" 4	"	33473	Geo. Hirshfeld, Halifax, N.S.	1½ "	22	Vendor
" 4	"	33474	T. Spry, Halifax, N.S.	1½ "	23	"
Dec. 5	"	33500	C. S. Davis, Halifax, N.S.	1½ "	23	"
			DISTRICT OF PRINCE EDWARD ISLAND—			
Dec. 2	Lard	31185	Geo. Rackham, Charlottetown	1½ lbs.	27	Thos. Strickland, Charlottetown.
" 2	"	31186	R. F. Maddigan, Charlottetown	1½ "	24	Chaput Fils & Co., Montreal.
" 2	"	31187	Sanderson & Co., Charlottetown	1½ "	24	Laing Packing Co., Montreal.
" 2	"	31188	L. J. McDonald, Charlottetown	1½ "	27	Davies, Limited, Montreal.
" 2	"	31189	Coffin & Co., Charlottetown.	1½ "	30	Davis & Fraser, Charlottetown.
Dec. 4	"	31190	R. T. Holman Ltd, Summerside.	1½ "	24	Park, Blackwell & Co. Ltd., Toronto.
" 4	"	31191	W. J. Lidstone, Summerside	1½ "	24	The Whyte Packing Co., Stratford, Ont.
" 4	"	31192	F. W. Strong, Summerside.	1½ "	21	Laing Packing Co., Montreal.
" 5	"	31193	D. McKenzie, Kensington.	1½ "	25	Park, Blackwell & Co., Ltd., Toronto.
" 9	"	31194	A. Gates & Co., Charlottetown	1½ "	24	Chaput Fils & Co., Montreal.

Inspector's Report.	Results of Analysis.				Opinion of the Chief Analyst.
	Water.	Iodine No.	Butyro-refractometer at 40° C.	Halphen Reaction.	
R. J. WAUGH, INSPECTOR.					
.. ..	None.	51·5	49·8	None.	Genuine.
In pails of 30 lbs; Labeled pure.	"	62·8	51·4	"	"
Labeled Pure Silver Leaf Brand.	"	63·9	51·2	"	"
Labeled Rex Brand.....	"	64·6	51·5	"	"
....	"	47·7	49·1	"	Doubtful; is abnormal, and may contain beef fat.
....	"	52·0	49·3	"	Genuine.
Silver Leaf Brand.....	"	57·3	51·3	"	"
....	"	55·5	50·3	"	"
.....	"	53·5	49·7	"	"
....	"	54·2	49·7	"	"
T. MOORE, INSPECTOR.					
....	None.	49·0	49·3	None.	Doubtful; is abnormal, and may contain beef fat.
.....	"	56·4	50·1	"	Genuine.
....	"	57·3	50·9	Slight red.	Doubtful; appears to contain a trace of cotton seed oil.
....	"	64·8	51·0	None.	Genuine.
....	"	52·4	49·8	"	"
....	"	66·6	51·5	"	"
. . ..	"	57·5	50·3	"	"
Sold as compound.....	0·16	86·1	56·4	Deep red.	Contains cotton seed oil.
....	None.	63·7	50·9	None.	Genuine.
....	"	52·9	50·4	"	"

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by the Vendor.
1907.						
			DISTRICT OF NEW BRUNSWICK—			
Dec. 3	Lard, cake....	29604	Messrs. John Hopkins, St. John, N.B.	1½ lbs..	27	Vendors, manfrs
" 10	" bar.....	29605	E. B. Taylor, St. John, N.B..	1½ " .	21	"
" 11	" bar.....	29606	W. A. Porter, St. John, N.B..	1½ " ..	27	Slipp & Flewelling, St John, N.B.
" 11	" leaf	29607	F. E. Williams Co. Ltd., St. John, N.B.	1½ " ..	27	Vendors, manfrs.
" 17	" package.	29608	Geo. H. Ingraham, Sussex, N.B.	2 " ..	32	Sussex Packing Co., Sussex King's Co., N.B.
" 18	" tub	29609	Cassedy & Belliveau, Moncton, N.B.	1½ " ..	23	The Wm. Davies Co. Ltd., Toronto, Ont.
" 19	" tub.....	29610	Miller Brothers, Newcastle, N.B.	1½ " ..	24	Park, Blackwell & Co. Toronto.
" 21	" tub.....	29611	Wm. Currie & Co., Campbellton, N.B.	1½ " ..	24	Swift & Co., U.S.A..... ..
1908. Jan. 4	"	29612	James Boyle & Sons, Fredericton, N.B.	1½ " ..	23	Montreal Packing Co. Ltd., Montreal, P.Q.
" 6	" leaf.....	29613	Imperial Packing Co., Woodstock, N.B.	1½ " ..	21	Vendors.....
			DISTRICT OF QUEBEC—			
Dec. 5	Lard	26338	L. P. St. Pierre, 165 Rue Notre Dame.	1 lbs..	25	Montreal Packing Co. ....
" 5	"	26366	O. Carignan & Fils, Trois Rivières, P.Q.	2 " ..	36	" " .....
" 4	"	26367	Durand & Précourt, 52 Rue des Forges.	1 " ..	15	" " .....
" 4	"	26368	J. O. Gauthier, 33 Rue des Forges.	3 " ..	45	Laing Packing & Provision Co.
" 4	"	26369	Belfeuille & Geroux, 46 Rue des Forges.	1 " ..	15	Laing's, Montreal . . ..
" 4	"	26370	L. Brunelle & Frère, 33 Rue Platon.	1¼ " ..	18	Swift & Co., Chicago. . ...
" 4	"	26371	C. B. Morissette & Co., 21 Rue Platon.	1¼ " .	18	Laing's, Montreal .....
" 11	"	26372	Mad. T. B. Nadeau, 86 Commercial Lévis.	1 " ..	16	G. D. Couture.....
" 11	"	26373	Antoine Carrier, 95 St. Laurent Lévis.	2 " ..	36	Vendor..... ....
" 11	"	26374	Godfroid Barron, 105 St. Laurent Lévis.	1½ " .	24	Antoine Carrier..... .....

Inspector's Report.	Results of Analysis.				Opinion of the Chief Analyst.
	Water.	Iodine No.	Butyro-refractometer at 40° C.	Halphen Reaction.	
J. C. FERGUSON, INSPECTOR.					
Sample from a 3 lb. bar in store; local term, Cake Lard.	None.	54·8	48·8	None.	Genuine.
Sample from 3-lb bar.....	0·16	54·2	50·4	"	"
" "	None.	53·7	50·5	"	"
" "	"	50·0	53·3	"	"
Sweet Briar Brand. Rendered by The Matthews Packing Co. Ltd., Sussex, N.B.	"	47·5	49·3	"	Doubtful; probably contains beef fat.
Tub Lard. Sample from 55 lb. tub.	1·36	57·0	49·2	"	Doubtful; as containing over 1 per cent, water.
Tub Lard. Sample from 50 lb. tub.	None.	51·4	48·8	Slight red.	Doubtful; containing a trace of cotton seed oil.
Sample taken from 50 lb tub Brand Swift's Siver Leaf Lard.	0·40	63·3	51·9	None.	Genuine.
Pound packages, Corona Brand. Original wrappers on samples.	0·36	53·0	50·0	"	"
From steam vat while rendering. Native Hogs. Hilton Hay, President, R. A. Bell, Foreman.	None.	51·0	49·7	"	"
E. BELAND, INSPECTOR.					
....	None.	62·2	50·7	None.	Genuine.
....	"	52·6	50·6	"	"
....	"	54·4	50·9	"	"
....	"	55·7	51 0	"	"
....	"	62·6	51·6	"	"
....	"	58·2	50·8	"	"
....	"	61·0	51 3	"	"
. .. .	"	54·3	50·3	"	"
....	"	59·0	51·6	"	"
....	"	66·0	51·6	"	"

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Addres of Manufacturer or Furnisher as given by the Vendor.
1907.						
			DISTRICT OF ST. HYACINTHE—			
Nov. 29	Lard	27910	Thos. Hebert, St. Hyacinthe	1½ lbs.	23	The Whyte Packing Co, Stratford, Ont.
Dec. 2	"	27911	H. Claprood, St. Jean	1½ "	23	N. K. Fairbank, Montreal
" 2	"	27912	A. Beauchamp, St. Jean	1½ "	24	Vendor
" 2	"	27913	T. Landry & Fils, Stanbridge	1½ "	20	Davies Limited, Montreal
" 3	" LilyWhite	27914	J. B. Nadeau, Montreal	1½ "	24	Collingwood Packing Co., Collingwood, Ont.
" 4	"	27915	C. S. Roy, Megantic	1¼ "	22	Alex. Ames, Sherbrooke, Que.
" 5	"	27916	The Hovey Bros. Packing Co., Sherbrooke.	1 pail	80	Vendors
" 5	"	27917	A. W. Beausoliel, Richmond	1 lb.	15	Park Blackwell Co., Toronto.
" 10	"	27918	Guyon & Hanfield, Contrecœur	1½ lbs.	23	L. Chaput, Fils & Cie., Montreal.
" 12	"	27919	E. A. Piché	1½ "	23	The Montreal Packing Co., Montreal.
			DISTRICT OF MONTREAL—			
Dec. 5	Lard	31549	A. Lagarde, 549 Notre Dame W., Montreal.	1½ lbs.	24	Not known
" 5	"	31550	A. Desrocher, 7 Mountain St., Montreal.	1½ "	23	Swift, Chicago, Ill
" 13	"	31551	C. Barrette, Joliette, P.Q.	1½ "	21	" "
" 13	"	31552	Malo Bros, Joliette, P.Q	1½ "	23	Lang P. & P.Co., Montreal.
" 16	"	31553	A. Racicot, 58 Prince Arthur St., Montreal.	1½ "	25	Gunn & Langlois
" 16	"	31554	W. Pierre & Bros., 45 Prince Arthur St., Montreal.	1½ "	26	Davies Ltd., Montreal
" 16	"	31555	R. E. Kelly, Huntingdon, P.Q.	1½ "	24	
" 16	"	31556	A. Chalmers, Huntingdon, P.Q.	1½ "	30	Montreal Packing Co.
" 19	"	31557	Jas. Duncan, Lachine, P.Q	1½ "	23	Park Blackwell Co., Ltd., Toronto.
" 19	"	31558	O. Poitras, Lachine, P.Q	1½ "	23	

Inspector's Report.	Results of Analysis.				Opinion of the Chief Analyst.
	Water.	Iodine No.	Butyro-refractometer at 40° C.	Halphen Reaction.	
J. C. ROULEAU, INSPECTOR.					
Labeled Pure Kettled Lard	0·16	58·0	51 1	None.	Genuine.
Labeled N.K. Fairbank Refined Lard Compound. Trade Mark, Boar's Head.	None.	91·8	56·8	Deep red.	Contains cotton seed oil.
.....	"	43·3	48·8	None.	Doubtful, probably contains beef fat.
Labeled Pure Lard, Davies Ltd., Montreal.	0·10	60·2	50·6	"	Genuine.
Labeled, Absolutely Pure Lard.	None.	53.5	50·4	"	"
Warranted pure lard.	0·28	54·0	50·5	"	"
Marked, Pure Kettle Rendered Leaf Lard.	0·16	53·5	50·4	"	"
Marked, 493447 Canada Approved. Pure Lard.	None.	54·3	50·3	"	"
Marked, 'Extra Pure Lard Perfection 48614 Canada Approved.	"	57·5	50·6	"	"
Marked, Corona Pure Lard.	"	52·5	50·3	"	"
J. J. COSTIGAN, INSPECTOR.					
.....	None.	53 5	50·0	None.	Genuine.
.....	"	62·5	50.1	"	"
Tub has U.S. Inspection Stamp 3857403 pasted thereon.	"	63·5	52·0	"	"
.....	"	59·5	50·7	"	"
.....	"	58·4	50 7	"	"
.....	"	52·8	49·8	"	"
.....	"	53·9	50.0	"	"
Crown Brand Pure Lard.	0·10	55·5	50·3	"	"
.....	0·20	57·3	50·3	"	"
Silver Leaf Brand.....	None.	63·9	50·3	"	"

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by the Vendor.
1907.						
			DISTRICT OF OTTAWA—			
Dec. 11	Lard	34085	Goodall Bros., Ottawa	1¼ lbs.	19	The Geo. Matthews Co., Ltd., Ottawa.
" 11	"	34086	P. D. Herbert, Cor. Bank and Lisgar Sts., Ottawa.	1¼ "	15	Swift Co., Chicago
" 12	"	34087	C. Moreland, Cor. Bank and 4th Ave., Ottawa.	1½ "	20	Park Blackwell & Co., Ltd., Toronto.
" 12	"	34088	A. P. Johnson, Ottawa	1½ "	16	Swift & Co., Chicago
" 12	"	34089	The Geo. Matthews Co., Cor. Bank and Lewis Sts., Ottawa.	1½ "	16	Vendors
" 12	"	34090	T. Lindsay Co., Ottawa	1½ "	23	The Geo. Matthews Co., Ltd.
" 13	"	34091	Alfred Edwards, Cornwall	1½ "	17	The Montreal Pkg. Co., Ltd.
" 13	"	34092	D. J. Gillies, Cornwall	1½ "	15	"
" 17	"	34093	J. K. Whitelaw, Arnprior	1½ "	23	The Wm. Davies Co., Ltd.
" 17	"	34094	W. M. Howe, Arnprior	1½ "	25	Fowler
			DISTRICT OF KINGSTON—			
Dec. 2	Lard	33031	A. Maclean, Ontario St., Kingston.	1½ lbs.	21	A. Maclean, Kingston.
" 21	"	33032	Davies & Co., Princess St., Kingston.	1½ "	23	Davies Co., Toronto
" 21	"	33033	P. Haffner, Montreal St., Kingston.	1½ "	23	J. Y. Parkhill, Kingston
" 21	"	33036	J. McCulla, Montreal St., Kingston.	1½ "	23	Matthews, Peterboro'
" 3	"	33037	Davies Co., Front St., Belleville.	1½ "	23	Davies Co., Toronto
" 3	"	33038	G. Pearson, Front St., Belleville.	1½ "	23	"
" 4	"	33039	J. Sutherland, George St., Peterboro'.	1½ "	23	Fowler, Hamilton
" 4	"	33040	Whiteand & Gillespie, George St., Peterboro'.	1½ "	24	Matthews, Peterboro'
" 4	"	33041	P. Connall & Son, George St., Peterboro'.	1½ "	24	" "
" 4	"	33042	D. W. Porter, George St., Peterboro'.	1½ "	24	" "

Inspector's Report.	Results of Analysis.				Opinion of the Chief Analyst.
	Water.	Iodine No.	Butyro-refractometer at 40° C.	Halphen Reaction.	
J. A. RICKEY, INSPECTOR.					
Taken from pail marked, 'Matthews' Pure Lard'. Labeled Canada Approved, Establishment 2-A—The Geo. Matthews Co., Ltd.	None.	56·4	50 1	None.	Genuine.
Marked, 'Swift's Silver Leaf Brand', Guaranteed Pure Lard. Inspected and passed Dept. of Agri., U.S. Stamp C. 1451565.	"	64·4	50·5	"	"
Pail marked Pure Lard....	"	56·3	50·2	"	"
Labeled 'Swift's Silver Leaf Brand', Guaranteed Pure Lard. C. 1451118.	"	64 8	50·3	"	"
Labeled 'Rose Brand' Canada Approved. Establishment 2-A. The Geo. Matthews Co., Limited.	"	55·2	50·0	"	"
Labeled 'Matthew's Pure Lard, Hull, Can. Approv'd	"	60·4	50·7	Deep red.	Adulterated; contains cotton seed oil.
Labeled 'Corona Pure Lard. Has no equal. Montreal Packing Co., Montreal'.	"	55·2	50·6	None.	Genuine.
Labeled Corona Brand Pure Lard, without equal. The Montreal Packing Co., Montreal, P.Q.	"	62·3	51·2	"	"
Labeled Pure Family Lard.	"	59·5	50·4	"	"
Labeled Pure Lard 'Imperial Brand'. Fowler's Canadian Co., Ltd.	"	58·6	50·5	"	"
J. HOGAN, INSPECTOR.					
....	None.	55·3	50·2	None.	Genuine.
....	"	55·0	50·4	"	"
....	"	53·5	50·0	"	"
.. ..	"	62·0	50·5	"	"
.....	"	59·5	51·3	"	"
.....	"	59·5	50·4	"	"
.....	"	59·5	50·3	"	"
....	0·36	52·0	50·0	"	"
....	"	51·0	49·7	"	"
.....	"	55·3	50·5	"	"

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Addtess of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by the Vendor.
1907.						
			DISTRICT OF TORONTO—			
Dec. 9.	Lard	33351	W. H Rourke, Penetanguishene	1½ lbs..	23	Gunn's, Ltd., Toronto.....
" 10.	"	33352	M. J. White, Midland	1½ " ..	23	Collingwood Packing Co., Collingwood.
" 11.	"	33353	Joseph Tippin, Orillia	1½ " ..	23	Wm. Davies Co., Toronto...
" 12	"	33354	A. G. McNabb, Barrie	1½ " ..	23	Collingwood Packing Co., Collingwood.
" 13.	"	33355	H. Poelham, Collingwood.....	1½ " ..	23	Canadian Packing Co., London.
" 13.	"	33356	A. S. Tolman, Meaford.....	1½ " ..	25	F. W. Fearman & Co., Ltd., Hamilton.
" 17.	"	33357	W. J. Currie, Orangeville	1½ " ..	23	Jos. O'Mara, Palmerston....
" 18.	"	33358	John McCusker & Co., Owen Sound.	1½ " ..	25	The Whyte Packing Co., Stratford.
" 19.	"	33359	C. McCallum & Co., Brampton.	1½ " ..	23	Ingersoll Packing Co., Ingersoll.
" 19.	"	33360	McKay Bros., Georgetown	1½ " ..	23	Collingwood Packing Co., Collingwood.
			DISTRICT OF LONDON—			
Nov. 29.	Lard.....	30442	Cardino Bros., Seaforth.....	1½ " ..	22	Fearman & Co., Hamilton ..
" 30.	"	30444	Sturday & Co., Goderich.....	1½ " ..	24	" " ..
Dec. 2.	"	30448	Whyte Packing Co., Stratford.	1½ " ..	21	Vendors.....
" 4.	"	30455	J. W. Irwin, Clinton.....	1½ " ..	25	Ingersoll Packing Co., Ingersoll.
" 5.	"	30458	Wm. Stonemans, Mitchell.....	1½ " ..	22	Fowler & Co., Mfrs., Hamilton.
" 20.	"	33395	A. S. Hallman, Berlin..	1½ " ..	25	Ingersoll Packing Co., Ingersoll.
" 23.	"	33396	Jas. Forbes & Son, Woodstock.	1½ " .	23	" " ..
" 24.	"	33397	Ballentine & Co., Windsor....	1½ " ..	24	Hammond Standish & Co., Detroit, U.S.
" 26.	"	33398	Geo. Steacy & Co., Chatham...	1½ " ..	25	The Whyte Packing Co., Stratford.
" 27.	"	33399	F. C. Toon, London	1½ " ..	24	Geo Matthews Co., Ltd., Brantford.

Inspector's Report.	Results of Analysis.				Opinion of the Chief Analyst.
	Water.	Iodine No.	Butyro-refractometer at 40° C.	Halphen Reaction.	
H. J. DAGER, INSPECTOR.					
Sample taken from large pail. Vendor says he believes to be pure.	None.	57·5	50·6	None.	Genuine.
" " ..	"	59·5	50·2	"	"
Sample taken from refrigerator already parcelled.	"	57·5	50·4	"	"
Sample taken from large pail in store.	0·36	57·5	50·4	"	"
Labelled on lid Guaranteed pure and choice.	None.	57·3	50·3	"	"
Labelled on lid Star Brand.	"	57·7	50·8	"	"
Sample taken from large pail labelled Celebrated Pure Lard.	"	63·2	51·4	"	"
Lid of pail is branded Pure Kettled Lard.	"	56·8	50·4	"	"
Pail is labelled 230386 Canada approved.	"	55·9	50·1	"	"
Lid on pail is branded Lilly White; absolutely pure.	"	54·0	50·3	"	"
T. KIDD, INSPECTOR AND H. J. DAGER, ACTING INSPECTOR.					
.....	None.	66·0	51·6	None.	Genuine.
.....	"	65·7	51·5	"	"
.....	"	61·0	51·2	"	"
.....	"	60·1	50·8	"	"
.....	0·20	60·5	50·8	"	"
Beaver Brand Pure Lard..	None.	60·8	50·5	"	"
Tub labelled 236907 Canada approved.	"	58·4	50·2	"	"
U.S. inspected and passed, labelled 173 Meat inspector.	0·12	59·7	51·1	"	"
Branded Pure Lard and stamped Canada approved	None.	58·2	50·4	"	"
Branded on lid of tub Pure Lard.	"	61·8	50·9	"	"

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by the Vendor.
1907.						
			DISTRICT OF MANITOBA—			
Dec. 10.	Lard.....	25660	D. Rice, Brandon	1½ lbs...	30	Swift Co., Chicago, Ill.....
" 10.	"	25668	J. F. Price & Co., Brandon....	1½ " ..	25	Not given..... .....
" 12.	"	25681	S. Reynolds, Winnipeg	1½ " ..	25	Gordon Ironsides Fares, Winnipeg, Man.
" 12.	"	25686	Finch Bros., Winnipeg.....	1½ " ..	25	Not given.
" 13.	"	25688	Wm. Mahoney, Winnipeg	1½ " ..	25	Gordon Ironsides Fares, Winnipeg, Man.
" 13.	"	25690	McDowall & Grant "	1½ " ..	25	J. Y. Giffin, Winnipeg, Man.
" 13.	"	25692	W. J. Bond "	1½ " ..	30	Gordon Ironsides Fares, Winnipeg, Man.
" 13.	"	25694	Duncan & Fea "	1½ " .	35	Not given..... ... .
" 16.	"	25699	T. A. Garland & Co., Portage la Prarie.	1½ " ..	35	Gordon Ironsides Fares, Winnipeg, Man.
" 17.	"	25847	Donnelly's Grocery, Norwood .	1½ " ..	25	Ingersoll Packing Co., Ingersoll.
			DISTRICT OF CALGARY—			
Dec. 9.	Lard.....	28866	F. Monk, Calgary	1½ lbs...	50	P. Burns & Co., Calgary....
" 9.	"	28867	"	1½ " ..	50	J. Y. Griffin & Co., Winnipeg, Man.
" 9.	"	28868	Farmer's Meat Market, Calgary	1½ " ..	45	Farmer's Meat Market, Calgary.
" 9.	"	28869	Pitman's Stores, Calgary.....	1½ " ..	50	Pitman's Stores, Calgary....
" 9.	"	28870	Calgary Cattle Co., Calgary...	1½ " ..	30	P. Burns & Co., Calgary....
" 13.	"	28871	Robert Mitchell, Medicine Hat	1½ " ..	50	T. Y. Griffin, Winnipeg, Man.
" 14.	"	28872	Riche & Miron, Lethbridge....	1½ " ..	50	Piche & Miron, Lethbridge..
" 14.	"	28873	P. Burns & Co., Lethbridge...	1½ " ..	50	P. Burns & Co., Lethbridge.
" 17.	"	28874	Capital Mercantile Co., Edmonton.	1½ " ..	30	Vendors..... .....
" 17.	"	28875	P. Burns & Co., Edmonton....	1½ " ..	30	" ....

Inspector's Report.	Results of Analysis.				Opinion of the Chief Analyst.
	Water.	Iodine No.	Butyro-refractometer at 40° C.	Halphen Reaction.	
A. C. LARIVIÈRE, INSPECTOR.					
....	None.	64·6	51·4	None.	Genuine.
....	"	62·4	50·8	"	"
..... .	"	62·4	51·0	"	"
.....	"	64·6	51·5	"	"
... .	"	64·4	51·3	"	"
....	"	60·6	51·0	"	"
....	0·12	62·6	51·0	"	"
.....	None.	61·0	50·7	"	"
....	"	57·9	50·8	"	"
....	0·16	57·5	50·6	"	"
R. W. FLETCHER, INSPECTOR.					
....	0·20	62·0	50·8	None.	Genuine.
....	None.	54·8	51·2	"	"
....	0·16	64·2	51·7	"	"
.....	None.	64·8	51·6	"	"
.....	"	60·5	51·1	"	"
... .	"	61·5	50·8	"	"
. ...	"	64·5	51·2	"	"
....	"	61·0	50·8	"	"
....	"	65·8	51·5	"	"
.....	"	59·5	50·6	"	"

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by the Vendor.
1907.						
			DISTRICT OF VANCOUVER—			
Dec. 18.	Lard.....	34201	C. E. Turner, Vancouver ...	1½ lbs...	25	The Wm. Davies Co., Ltd., Toronto.
" 18.	"	34202	J. F. May "	1½ " ..	30	J. Y. Griffin & Co., Ltd., Winnipeg, Man.
" 18.	"	34203	The Hudson's Bay Co., Vancouver.	1½ " ..	25	Armour & Co., Chicago, U.S.
" 19.	"	34204	The A & C. Grocery Co., Vancouver.	3-lb. pail	50	Frye Bruhn & Co., Seattle, Wash.
" 19.	"	34205	F. Wright, Vancouver.....	3 " .	60	....
" 19	"	34206	J. McTaggart "	1½ lbs...	30	Fry Bruhn & Co., Seattle, Wash.
" 19.	"	34207	The H. A. Edgett Co., Vancouver.	2 " ..	30	Vendors ....
" 20.	"	34208	P. Burns & Co., Vancouver.	3-lb. pail	45	" .....
" 20.	"	34209	Kelly, Douglas & Co., Vancouver.	3 " .	45	Caistens Packing Company, Seattle Wash.
" 20.	"	34210	E. H. Mcmillan, Vancouver.	" .	60	G. Y. Griffin Co., Ltd., Winnipeg, Man.
			DISTRICT OF VICTORIA—			
Jan. 4.	Lard.....	34806	A.R. Johnston, Nanaimo, B.C.	3 lbs....	65	Frye, Bruhn & Co., Seattle.
" 21.	"	34816	Windsor Grocery Co., Victoria, B.C.	3 " ..	60	" "
" 21.	"	34817	" "	2 " ..	40	Armour & Co., Chicago.
" 21.	"	34820	J. W. Speed, Victoria, B.C....	3 " ..	35	Frye, Bruhn & Co., Seattle.
" 21.	"	34821	" "	3 " ..	60	Griffins & Co., Winnipeg.
" 22.	"	34824	F. P. Wotson, Victoria, B. C..	3 " ..	60	John Morrell & Co., Ottumwa, Iowa.
" 27.	"	34827	" "	2½ " ..	60	The Wm. Davis Co., Toronto.
" 27.	"	34828	Fell & Co., Victoria, B.C.....	2 " ..	45	Armour & Co., Chicago.
" 27.	"	34829	Saunders Grocery Co., Victoria, B.C.	3 " ..	60	John Morrell & Co., Ottumwa, Iowa.
" 27.	"	34830	W. D. Wallace, Victoria, B.C.	2 " ..	40	J. Y. Griffin & Co., Vancouver, B.C.

Inspector's Report.	Results of Analysis.				Opinion of the Chief Analyst.
	Water.	Iodine No.	Butyro-refractometer at 40° C.	Halphen Reaction.	
E. B. PARKINSON, INSPECTOR.					
Pure rendered lard taken from 50c. pail.	None.	58·6	50·3	None.	Genuine.
Marked Pure Lard.....	"	60·6	51·0	"	"
Shield Brand marked Pure Lard.	"	62·6	51·5	"	"
Wild Rose Brand marked Pure Lard.	"	61·9	51·0	"	"
Marked Pure Lard.....	"	60·6	50·5	"	"
Not labelled	"	63·2	51·3	"	"
Marked Pure Leaf Lard...	"	61·5	51·2	"	"
No marks on pail.	"	59·1	51·2	"	"
Washington Brand, Pure Lard.	"	64·8	51·9	Deep red.	Adulterated; contains cotton seed oil.
Marked Pure Lard.....	"	61·9	50·0	None.	Genuine.
D. O. SULLIVAN, INSPECTOR.					
Put up in 3-lb. tins.. ...	0·04	65·7	51·8	None.	Genuine.
"	0·20	62·5	51·5	"	"
....	None.	63·5	51·6	"	"
.. ..	"	63·0	51·4	"	"
Put up in 3-lb. tins.....	"	64·2	51·4	"	"
.....	"	64·2	57·6	"	"
....	"	54·2	51·1	"	"
....	"	64·2	51·6	"	"
Put up in 3-lb. tins.....	0·14	64·2	51·8	"	"
....	None.	64·2	51·5	"	"

APPENDIX N.

BULLETIN No. 148—HONEY

OTTAWA, February 13, 1908.

W. J. GERALD, Esq.,
Deputy Minister of Inland Revenue.

DEAR SIR,—I have the honour to report upon a collection of Honey, made in December last. The immediate cause of this collection was a resolution passed by the Middlesex Beekeepers Association, in June, 1907, as follows:—"That this Association would recommend and ask that the Department of Inland Revenue at Ottawa, collect, annually, samples of honey, and that these samples be taken during the autumn or early winter; we would also request that those infringing the Pure Food Act be prosecuted."

I reported to you, on the 13th ult., the results of examination of 253 samples of honey (see Bull. 145), collected in April and May of 1907; and the present report may be considered as supplementary to that one. Its special interest lies in the fact of collection during the winter, in deference to the suggestion of the Beekeepers Association. It is to be presumed that this Association held that there would be greater likelihood of spurious samples being found on the market during the winter months.

It is gratifying to state that the report now submitted shows that strained honey, as found throughout Canada, is mainly a genuine article, true to name.

The following synopsis will bear out the statement:—

	Samples.
Found Genuine	135
" Doubtful	3
" Adulterated	2
Sold as Compound	1
Total	141

A memorandum giving details as to the inspection of honey, by this Department, in past years; and a brief account of the nature of the article, is published in Bulletin 145.

I would respectfully recommend the publication of this report as Bulletin No. 148.

I have the honour to be, Sir,
Your obedient servant,

A. McGILL,
Chief Analyst.

INSPECTION

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.
1907.						
			DISTRICT OF NOVA SCOTIA—			
Dec. 3	Honey ...	33475	National Drug Co., Halifax, N.S.	2 lbs.	30	Unknown ....
" 4	"	33476	T. F. Courtney & Co., Halifax, N.S.	2 "	50	Canadian Honey Co., Halifax, N.S.
" 5	"	33477	Irwin & Son, Halifax, N.S	2 "	50	National Drug Co., Halifax, N.S.
" 5	"	33478	M. D. Logan, Halifax, N.S.	2 "	50	" " ..
" 5	" ...	33479	A. A. Thompson, Halifax, N.S..	2 "	40	" " ..
" 5	"	33480	E. M. McLeod, Halifax, N.S....	2 "	50	" " ..
" 5	"	33481	Brown Bros., Halifax, N.S.....	2 "	45	" " ..
" 5	"	33482	T. L. Harvey, Wolfville, N.S....	2 "	50	Unknown..... ... .
" 5	"	33483	F. C. Churchill, Wolfville, N.S..	2 "	40	" ....
" 10	"	33484	A. S. Hutchins, Liverpool, N.S . .	2 "	60	National Drug Co., Halifax, N.S.
			DISTRICT OF PRINCE EDWARD ISLAND—			
Dec. 2	Honey....	31195	Sanderson & Co., Charlottetown.	2 lbs.	60	Upton's, Montreal..... .....
" 2	"	31196	J. J. Gay & Son, Charlottetown..	2 "	75	F. Beals, Charlottetown.... ...
" 2	"	31197	Johnson & Johnson, Charlottetown.	2 "	60	Canadian Drug Co., St. John, N.B.
" 4	"	31198	Waugh & Steaves, Summerside..	2 "	75	National Drug Co., Halifax, N.S.
" 4	"	31199	T. Ching, Summerside....	3 bots.	90	The Fawcett Honey Co., Memramcook, N.B.
" 4	"	31200	A. M. P. Gourlie, Summerside...	3 crks.	75	Canadian Drug Co., St. John, N.B.
" 5	"	31201	Jardine & Bernard, Kensington..	2 lbs.	60	Lyman Sons & Co., Montreal....
" 5	" ...	31202	A. Keir, Kensington	2 "	75	Dr. Keir, Malpeque, P.E.I.....
" 5	"	31203	G. E. Hughes, Charlottetown ...	2 "	60	John Newson, Charlottetown ...
" 9	"	31204	John McKenna, Charlottetown..	2 "	60	Upton's, Montreal. ....
			DISTRICT OF NEW BRUNSWICK—			
Dec. 4	Honey. ..	29614	W. H. Bell, St. John, N.B.....	3 jars.	65	Leonard Hill, Port Williams, N.S.
" 5	"	29615	The Canadian Drug Co., Ltd., St. John, N.B.	3 "	75	Fairmount & Co., Toronto, Ont.
" 5	" ...	29616	G. S. Wetmore, St. John, N.B ..	3 bots.	60	Miles E. Vanwart, Kingston, Kings Co., N.B.

SESSIONAL PAPER No. 14

OF HONEY.

Inspector's Report.	Water.	Polarization.	Physical Characters.	Opinion of the Chief Analyst.
R. J. WAUGH, INSPECTOR.				
Said to be Nova Scotia honey. . .	25·30	− 6·0	Brown. Clear.....	Genuine.
....	25·20	−13·3	Light yellow. Mostly crystallized.	"
....	27·80	−17·0	Light yellow. Clear.....	"
....	28·20	−12·0	Yellow. Slightly crystallized ...	"
....	27·40	−10·0	Light yellow. Clear.....	"
....	30·20	−10·0	Yellow. Clear	"
....	23·10	−13·5	Yellow. Partly crystallized.....	"
Said to be King's County product.	23·80	−16·0	Yellow. Crystallized almost throughout.	"
.. ..	24·90	+ 4·8	Brown. Clear.....	Contains 17·94 per cent cane sugar. Doubtfully genuine.
....	29·00	− 9·8	Brown. Tolerably clear.....	Genuine.
T. MOORE, INSPECTOR.				
....	18·30	−19·6	Dark yellow. Crystallized throughout.	Genuine.
....	21·20	−11·5	Dark yellow. Partly crystallized.	"
....	17·30	−15·0	Yellow. Crystallized almost throughout.	"
....	25·10	−16·3	Dark yellow. Partly crystallized.	"
Warranted Pure Honey	20·70	−12·3	Brown. Clear.....	"
....	24·50	−15·4	Dark yellow. Partly crystallized.	"
....	20·50	−14·2	Light yellow. Crystallized throughout.	"
.. ..	19·30	−13·2	Yellow. Clear	"
....	19·60	−16·4	Yellow. Clear	"
....	19·90	−17·4	Dark yellow. Crystallized throughout.	"
J. C. FERGUSON, INSPECTOR.				
On label, Warranted Pure Honey. New Honey.	22·45	−15·3	Light brown. Clear	Genuine.
Labelled Pure White Clover Honey	21·25	−15·6	Pale yellow. Clear.....	"
Not labelled	19·25	−15·8	Brown. Clear.....	"

INSPECTION OF

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.
1907.						
			DISTRICT OF NEW BRUNWICK—			
Dec. 11	Honey....	29617	M. E. Grass, St. John, N.B.	3 jars.	68	Fawcett Honey Co., Ltd., Memramcook, N.B.
" 17	"	29618	The Sussex Mercantile Co., Ltd., Sussex, N.B.	3 "	75	Whitfield Harper, Anagance Ridge, N.B.
" 18	"	29619	J. T. Ryan, Moncton, N.B	3 "	70	The Fawcett Honey Co., Ltd., Memramcook, N.B.
" 21	"	29620	Moores Bros., Campbellton, N.B.	3 "	75	F. W. Fearman & Co., Hamilton, N.B.
Jan. 4	"	29621	W.H.Vanwart, Fredericton, N.B.	3 "	75	The Fawcett Honey Co., Ltd., Memramcook, N.B.
" 4	"	29622	C. Fred. Chestnut, Fredericton, N. B.	3 bots. 2 lbs.	65	The Canadian Drug Co., Ltd., St. John, N.B.
" 7	" .. .	29623	C. A. McKeen, Woodstock, N.B.	3 bots.	75	The National Drug and Chemical Co., Ltd., St. John, N.B.
			DISTRICT OF QUEBEC—			
Dec. 3	Honey. ..	26334	R. W. Williams, Trois Rivieres Platon.	2 lbs.	30	Ludger Poisson, Gentilly.....
" 3	"	26336	O. Carignan & Fils, Trois Rivieres, P.Q.	2 "	24	Ludger Rochefort, Becancour. ..
" 3	"	26337	L. P. Normand, 32 Rue de Forges	2 "	70	Sœurs du Précieux Sang .. ..
" 3	" .. .	26356	O. Carignan & Fils, Trois Rivieres, P.Q.	2 "	30	Ludger Rochefort, Becancour ...
" 11	"	26339	O. T. Dion, Commercial St., Levis	1½ "	30	Unknown..... ...
" 11	"	26340	Alfred Charrier, St. Laurent St., Levis.	1½ "	25	Ernest Dufour ..... .
" 11	" .. .	26341	Dr. Ed. Morin & Co., Cote du Passage, Levis.	2¼ "	45	Vendor..... ... .
" 11	"	26342	S. Marmet, Cote du Passage, Levis.	6 glasses.	75	Unknown... . ...
" 11	" .. .	26343	Calixte Dion, 67 Rue Fraser, Levis	2½ "	35	Vendor ....
" 11	"	26375	" " ..	1 lb ..	20	" .....
			DISTRICT OF ST. HYACINTHE—			
Dec. 11	Honey....	27920	Laferriére Frères & Cie., Pierreville.	3 glasses.	45	Jos. Turcot, St. Joachim de Courval.
Nov. 29	" ...	27921	Thos. Hébert, St. Hyacinthe ...	3 "	75	Ant. Gervais, St. Thomas d'Aquin.
Dec. 2	"	27922	M. Marsan, St. Jean.....	3 "	45	Upton's, Montreal.....
" 4	" ...	27923	Thom. Cameron Megantic.....	3 "	60	" " ....

SESSIONAL PAPER No. 14

HONEY—*Continued.*

Inspector's Report.	Water.	Polarization.	Physical Characters.	Opinion of the Chief Analyst.
J. C. FERGUSON, INSPECTOR.—*Continued.*				
Labelled, Warranted Pure Honey.	20·80	−12·0	Brown. Clear	Genuine.
Put in jars from bulk by vendor..	21·00	−14·8	Light brown. Partly crystallized.	"
No label	19·60	−14·5	" "	"
Not labelled	22·90	−16·0	Yellow. Partly crystallized	"
Labelled, Warranted Pure Honey. The Fawcett Honey Co., Ltd., Memramcook, N.B.	19·30	−13·0	Brown. Clear	"
From bulk in ½ gall. bottle. Vendor said sold to him as Ontario Honey, White Clover, by Can. Drug Co., St. John, N.B.	27·40	−14·5	Brown. Clear	"
Supposed to be Ontario Honey. Sold as received from the Nat. Drug and Chemical Co., St. John, N.B.	21·60	− 8·0	Brown. Clear	"
E. BELAND, INSPECTOR.				
	26·25	−11·5	Light brown. Clear	Genuine.
	20·25	− 9·5	" "	"
	22·10	− 5·5	Yellow. Partly crystallized.	"
	19·25	− 5·0	Light yellow. Clear	"
	16·15	− 8·7	Pale yellow. Partly crystallized.	"
	19·25	− 1·1	" "	"
	21·02	+ 0·8	" Clear	"
	18·35	− 6·8	" Partly crystallized.	"
	20·85	− 8·8	" "	"
	18·70	− 4·0	" "	"
J. C. ROULEAU, INSPECTOR.				
Not marked	28·10	−13·5	Brown. Partly crystallized	Genuine.
"	20·10	− 4·0	Yellow. Clear	"
Labelled Pure Clarified Honey	22·30	−14·8	Dark yellow. Partly crystallized.	"
" "	24·60	−14·0	" "	"

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantit	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.
1907.						
			DISTRICT OF ST. HYACINTHE—			
Dec. 5	Honey.	27924	Couture & Moore, Sherbrooke	3 "	30	Mr. Couture
" 6	"	27925	Bissounet Frères, Victoriaville	2 lbs.	26	Not known
" 7	"	27926	Chs. Peloquin, St. Hyacinthe	3 "	35	Vendor
" 10	"	27927	A. E. Lamoureux, Contrecœur	1 jar.	35	Not known
" 11	"	27928	D. Somerville, Pierreville	2 lbs.	20	Ed. Courchine, St. Thomas de Pierreville.
" 12	"	27929	J. O. Montplaisir, Drummondville.	1 jar.	30	R. Laroque, N.D. du Bon, Courseil.
			DISTRICT OF MONTREAL—			
Dec. 12	Honey.	31539	A. J. S. Kelly, Montreal	2 lbs.	30	S. Mireau, St. Marie Salome, P.Q.
" 12	"	31540	" "	2 "	30	" "
" 13	"	31541	C. Barrette, Joliette, P.Q.	2 pots.	30	
" 16	"	31542	W. Pierre & Bro., 45 Prince Arthur St., Montreal.	2 lbs.	30	Fortier & Monnette, Montreal.
" 16	"	31543	J. T. Mallette, 56 Ontario East, Montreal.	3 jars.	36	" "
" 16	"	31544	" "	3 "	36	" "
" 17	"	31545	W. J. Falle, St. Antoine Market, Montreal.	3 "	54	Edwards, Cornwall, Ont.
" 18	"	31546	J. N. Prieur, 907 St. Lawrence B., Montreal.	2 lbs.	40	Gunn & Langlois
" 18	"	31547	E. Brais, 743 St. Lawrence B., Montreal.	2 "	30	J. Dulude, St. Bruno, P.Q
" 19	"	31548	James Duncan, St. Joseph St., Lachine, P.Q.	2 "	30	Fortier & Monnette, Montreal.
			DISTRICT OF OTTAWA—			
Dec. 9	Honey.	34095	H. Armstrong, Ottawa	3 bots.	75	Alex. McLaughlin, Cumberland, Ont.
" 10	"	34096	Geo. H. Hopper, Ottawa	3 "	75	R. McJanet, Yarm, Canada
" 10	"	34097	W. Cunningham, Ottawa	3 "	90	A Farmer
" 10	"	34098	C. J. Provost, Ottawa	3 "	75	Michael D. Madden, Sarsfield.
" 11	"	34099	Bryson Graham & Co., Ottawa	3 sealers.	60	Not known
" 11	"	34100	C. Stratton, Ottawa	3 "	60	F. J. Castle Co., Ottawa
" 13	"	34101	G. W. Armstrong, Cornwall, Ont	3 "	75	Jno. J. Fee, Front St. East Toronto.
" 13	"	34102	Duncan & Co., Cornwall, Ont.	2 lbs.	60	A Farmer

SESSIONAL PAPER No. 14

OF HONEY—*Continued.*

Inspector's Report.	Water.	Polarization.	Physical Characters.	Opinion of the Chief Analyst.
J. C. ROULEAU, INSPECTOR.—*Continued.*				
Not marked	24·20	− 1·3	Yellow. Clear	Genuine.
From a 50 lb. pot	28·00	− 8·4	Brown. Partly crystallized	"
Not marked	22·30	−11·8	Yellow. Partly crystallized	"
"	21·50	− 5 0	Brown. Clear	"
From a 50 lb. pot	25·80	−13·3	Brown, Partly crystallized	"
Not marked	22·50	−21·7	Yellow. Slightly crystallized. Fermenting.	"
J. J. COSTIGAN, INSPECTOR.				
	23·40	− 7·8	Light yellow. Nearly all crystallized.	Genuine.
	22·40	−10·5	Brown. Nearly all crystallized	"
Labelled Upton's Pure Clarified Honey.	24·40	−11·3	Light yellow. Nearly all crystallized.	"
	25·20	−15·8	White. Crystallized throughout.	"
	24·20	−16·6	Dark brown. Turbid	"
	23·20	−15·8	Brown. Clear	"
	24·20	−10·3	Light brown. Clear	"
	25·60	−16·0	Light brown. Nearly crystallized throughout.	"
	23·30	−12·0	Pale yellow. Entirely crystallized.	"
	23·20	−15·8	Light brown. All crystals	"
J. A. RICKEY, INSPECTOR.				
	20·35	− 8·0	Pale yellow. Partly crystallized.	Genuine.
Labeled Pure Extracted Honey	20·26	− 9·3	Yellow. Partly crystallized	"
Not labelled	24·00	− 9·5	Brown. Crystallized throughout.	"
Labelled Warranted Pure Extracted Honey from Home of Honey Bee.	21·45	−12·8	Yellow. Clear	"
Not labeled	19·10	− 5·8	Pale yellow. Clear	"
"	18·80	−13·8	" "	"
Labelled Pure Honey	22·40	−17·4	" "	"
Not labelled	14·30	−10·4	Colourless. Entirely crystallized	"

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quanity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.
1907.						
			DISTRICT OF OTTAWA—			
Dec. 17	Honey....	34103	E. C. Armand, Arnprior.....	3 tumblers.	54	Ewing & Reid, Alliston.....
" 17	"	34104	T. McCormick, Arnprior.....	3 "	39	Laporte Martin & Co.....
			DISTRICT OF KINGSTON—			
Dec. 2	Honey....	33034	J. McCulla, Kingston	1½ lbs.	60	Fearman, Hamilton.....
" 2	"	33035	" "	1½ "	60	Gordon, Woodburn Road.....
" 3	"	33043	G. Pearson, Front St. Belleville..	2 "	45	C. F. Chisholm, Willbridge.....
" 3	"	34044	H. E. Fairfield, Belleville.....	2 "	40	White Co., Toronto .....
" 3	"	33045	A. J. McCrodan, Belleville.....	2 "	75	Heing & Reid.....
" 3	"	33046	S. Fount, Port Hope.....	3 "	75	.....
" 3	"	33047	W. D. Stephans, Port Hope.....	3 "	55	.....
" 4	"	33048	W. J. Routhy, Peterboro.....	3 "	45	Upton.....
" 4	"	33049	J. S. Sutherland, Peterboro.....	3 "	45	" .....
" 3	"	33052	Willbridge & Clarke, Belleville..	2 "	75	.....
			DISTRICT OF TORONTO—			
Dec. 10	Honey ...	33371	Playfor & Preston, Midland.....	3 lbs.	50	A Farmer.....
" 11	"	33372	A. C. Buchner, Orillia.....	3 jars.	55	P. A. Porrott, Orillia.....
" 11	" ...	33373	Thos. Haywood, Orillia.....	3 "	60	J. G. Wilson, Orillia.....
" 12	"	33374	D. R. Murchison, Barrie.....	3 "	60	Jas. Turner & Co., Hamilton ...
" 13	"	33375	Godfrey & Hoehn, Meaford.. ...	3 "	50	Mr. Donnell, Bay View P.O....
" 17	"	33376	R. J. Frampton, Orangeville	3 "	75	McDougal & Lemmon, Owen Sound.
" 18	"	33377	J. R. Brown, Owen Sound. ...	3 "	75	Whitehead & Henther, Walkerton.
" 18	"	33378	Priest & Spragge, Owen Sound ..	2 jars.	60	Mr. Grimolby, Owen Sound ....
" 19	"	33379	Dawson & Co., Brampton	1 "	45	Haines Bros., Cheltenham ....
" 19	"	33380	J. McDermid, Georgetown.....	3 "	75	J. McPherson, Norval.....
Jan. 8	"	33400	John Callicott, 895 Queen St. W., Toronto.	5 small jars.	50	Vendor .....

SESSIONAL PAPER No. 14

OF HONEY—*Continued.*

Inspector's Report.	Water.	Polarization.	Physical Characters.	Opinion of the Chief Analyst.
J. A. RICKEY, INSPECTOR.—*Continued.*				
Sold to Dealer for White Clover Honey, Lid of tumbler marked Extra Fine.	19·30	−12·6	Light brown. Clear	Genuine.
.....	19·30	−12·9	" "	"
J. HOGAN, INSPECTOR.				
.....	19·50	−13·8	Colourless. Crystallized throughout.	Genuine.
.....	18·35	−11·8	Pale yellow. Partly crystallized..	"
.....	23·05	−15·0	Brown. Crystallized throughout.	"
.....	20·60	−17·2	" "	"
.....	15·95	−16·8	" Clear	"
.....	19·00	−17·0	" "	"
.....	20·30	−15·8	" Partly crystallized	"
.....	16·25	−18·5	" "	"
.....	18·25	−18·8	" "	"
.....	18·75	−16·2	Pale yellow. Crystallized throughout.	"
H. J. DAGER, INSPECTOR.				
Called Gilmore brand, not labelled	18·55	−13·8	Pale yellow. Crystallized throughout.	Genuine.
Not labelled	21·45	− 8·6	" "	"
"	19·90	−14·2	Pale yellow. Partly crystallized.	"
Labelled, Upton's Pure Clarified Honey.	23·95	−18·6	Brown. Partly crystallized	"
Sample taken from 4 gall. can	18·35	−13·3	Pale yellow. "	"
Labelled, Pure Honey	25·80	−11·9	Yellow. Clear	"
Not labelled	24·30	−14·9	Yellow. Partly crystallized	"
Labelled, Pure White Clover Honey	24·20	−16·1	" "	"
Not labelled	22·00	−14·4	Dark yellow. Slightly crystallized.	"
"	21·00	−12·4	Yellow. Very slightly crystallized.	"
Labelled, Pure Honey. Contents guaranteed not to granulate by vendor.	25·40	−19·0	Yellow. Clear. No printed label.	"

INSPECTION OF

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Man facturer or Furnisher as given by Vendor.
1907.						
			DISTRICT OF LONDON—T. KIDD, INSPECTOR			
Nov. 29	Honey ...	30441	John Beattie, Seaforth.....	3 lbs.	45	Masuret & Co., London, Ont....
" 30	"	30445	J. J. McEwin, Goderich.....	1½ "	25	George Harris, Dungannon, Perth Co.
Dec. 2	"	30449	Edward O'Flaherty, Stratford...	3 cups	45	Edward Adams & Co., London, Ont.
" 2	"	30450	McCulley & Hawke, Stratford...	3 "	45	A Farmer... ....
" 5	"	30460	T. S. Ford & Co., Mitchell	3 "	45	Not known.....
" 20	"	35001	Betzner & Co., Berlin	3 jars.	60	Mr. Trussler, Berlin... .. ..
" 23	"	35002	Fred. Milmine, Woodstock.....	2 "	70	Miss Bond, Eastwood .....
" 24	" ..	35003	W. J. Cherney, Windsor.....	3 "	75	Purchased at London Fair; took 1st Prize. Think man's name was Smith.
" 26	"	35004	Wm. Anderson, Chatham.....	3 "	75	W. A. Chrysler, Chatham .....
" 27	"	35005	Harry Ranaham London.....	3 "	60	E. T. Bainard, London... .....
			DISTRICT OF MANITOBA—			
Dec. 10	Honey ...	25659	D. Rice, Brandon.	2 lbs.	35	E. D. Smith, Ont .....
" 10	"	25667	J. F. Price & Co., Brandon..	3 "	90	Codville & Co., Winnipeg, Man.
" 12	"	25680	S. Reynolds, Winnipeg	2 "	55	The White Star Mfg. Co., Winnipeg, Man.
" 12	" ..	25685	Finch Bros., Winnipeg.....	3 "	75	Michigan Clover Honey Co., Detroit, Mich.
" 13	"	25687	Wm. Mahoney, Winnipeg.....	2½ "	75	Macpherson Fruit Co., or A. Macdonald & Co., Winnipeg.
" 13	"	25689	McDowall & Grant, Winnipeg...	3 "	45	B. Davis, St. Thomas, Ont.. ....
" 13	"	25691	W. J. Bond, Winnipeg.....	2½ "	75	Bright & Johnson, Winnipeg...
" 13	"	25693	Duncan & Fea, Winnipeg. ...	2 "	70	Campbell Bros. & Wilson, Winnipeg.
" 16	"	25698	T. A. Garland & Co., Portage la Prairie.	3 "	55	Foley, Lock & Larson, Winnipeg
" 17	" ...	25846	Donnelly's Grocery, Norwood....	2 "	30	White & Co., Toronto, Ont. ....
1908.			DISTRICT OF CALGARY—			
Jan. 10	Honey ...	28876	L. T. Newburn & Co., Calgary ..	3 bots.	55	Imperial Cocoa and Spice Co., Hamilton, Ont.
" 10	"	28877	G. F. & J. Galt, Calgary.....	3 "	45	T. Upton Co., Ltd., Hamilton, Ont.

SESSIONAL PAPER No. 14

HONEY—*Continued.*

Inspector's Report.	Water.	Polarization.	Physical Characters.	Opinion of the Chief Analyst.
AND H. J. DAGER, ACTING INSPECTOR.				
.....	18·20	−14·8	Pale yellow. Partly crystallized.	Genuine.
.....	17·95	−16·3	Brown. Crystallized throughout.	"
.....	21·15	−13·8	" "	"
.....	18·65	−15·0	Pale yellow. Clear.....	"
.....	17·30	− 5·0	" Partly crystallized.	"
Not labelled	21·20	− 9·2	Light yellow. "	"
"	24·40	−15·7	Yellow. "	"
"	23·20	− 8·1	Light yellow. Crystallized throughout.	"
"	21·40	−15·3	Yellow. Partly crystallized	"
"	21·30	−13·0	" " ...	"
A. C. LARIVIERE, INSPECTOR.				
.....	22·25	−13·2	Dark brown. Partly crystallized.	Genuine.
.....	18·70	−14·2	Pale yellow. Clear	"
.....	23·63	+ 4·3	" "	Contains 17·5 per cent. cane sugar. Doubtful.
.....	19·35	−14·0	" "	Genuine.
.....	20·35	−15·2	Brown. Partly crystallized.	"
.....	21·15	−16·8	Pale yellow. "	"
Ontario Clover Honey...	20 10	+25·0	" Clear.....	Contains 32·56 per cent. cane sugar. Adulterated.
Royal Shield Honey...	17·85	+26·2	" "	Sold as a mixture .....
.....	22·55	−10·9	Brown. Partly crystallized.....	Genuine.
.....	20·15	−16·5	Light brown. "	"
R. W. FLETCHER, INSPECTOR.				
.....	22·7	−12·4	Yellow. Partly crystallized	Genuine.
.....	19·25	−12·2	Light brown. "	"

INSPECTION OF

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.
1908.						
			DISTRICT OF CALGARY—			
Jan. 10	Honey....	28878	Macpherson Fruit Co , Calgary..	3 "	45	T. Upton Co., Ltd., Hamilton, Ont.
" 10	"	28879	Georgeson & Co., Ltd., Calgary..	3 "	90	Pacific Coast Syrup Co., San Francisco, U.S.
" 10	"	28880	Campbell, Wilson & Horn, Winnipeg.	3 "	50	T. Upton Co., Ltd., Hamilton, Ont.
" 13	"	28881	Medicine Hat Trading Co., Medicine Hat.	3 "	60	" " ..
" 14	" ...	28882	Hudson Bay Co., Lethbridge, Alta.	3 "	75	Bruce Davis, St. Thomas, Ont ..
" 14	" ..	28883	The Bentley Co., Lethbridge, Alta.	3 "	1.05	The Pacific Coast Syrup Co., San Francisco, Cal.
" ..	"	28884	Capital Mercantile Co., Edmonton.	3 "	60	T. Upton Co., Hamilton, Ont...
" ..	"	28885	Hudson Bay Co.	3 "	90	Bruce Davis, St. Thomas, Ont ..
1907.			DISTRICT OF VANCOUVER—			
Dec. 18	Honey...	34211	C. E. Turner, Pender St., Vancouver.	3 jars.	75	H. L. Johnson, Chilliwack, B.C.
" 18	"	34212	J. F. May, Pender St., Vancouver.	3 "	75	J. Reagh, Ladner, B.C.. .....
" 18	"	34213	The London Grocery, Granville St., Vancouver.	3 "	45	The Pacific Coast Syrup Co., San Francisco, U.S.
" 18	"	34214	Hudson Bay Co., Granville St., Vancouver.	3 "	75	O. L. Charlton, Victoria, B.C...
" 19	"	34215	H. A. Howell & Co., Granville St., Vancouver.	3 lbs.	65	Garcia Maggini, San Francisco..
" 19	"	34216	H. J. Hampton, Granville St., Vancouver.	3 jars.	75	O. L. Charlton, Victoria, B.C...
" 19	" ...	34217	H. A. Edgett Co., Hastings St., Vancouver.	3 "	75	J. Fyfe Smith.....
" 20	" ...	34218	Geo. Wagg, Hastings St., Vancouver.	2 lbs.	40	San Diego Honey Co., San Francisco.
" 20	"	34219	W. H. Moore, Cordova St., Vancouver.	3 jars.	75	Not known.... .....
" 20	"	34220	The Dom. Grocery, Water St., Vancouver.	3 "	75	Seattle & Puget Sound Packing Co., Seattle, Wash.

SESSIONAL PAPER No. 14

HONEY—*Continued.*

Inspector's Report.	Water.	Polarization.	Physical Characters.	Opinion of the Chief Analyst.
R. W. FLETCHER, INSPECTOR.—*Continued.*				
.....	19·65	−13·8	Light brown. Partly crystalline.	Genuine.
.....	21·10	−13·8	Yellow. Clear.....	"
.....	21·30	−15·2	Light brown. Partly crystalline..	"
.....	18·50	−20·5	" " ..	"
.....	19·10	− 9·5	Colourless. Crystallized throughout.	"
.....	20·10	−14·0	Yellow. Clear.....	"
.....	19·40	−17·8	Light brown. Partly crystallized	"
.....	10·10	− 8·5	Colourless. Crystallized throughout.	"
E. B. PARKINSON, INSPECTOR.				
.....	24·60	− 9·7	Dark yellow. Nearly all crystallized.	Genuine.
White Clover Brand, guaranteed pure.	22·20	− 6·3	Yellow. Clear.....	"
.....	23·20	−15·7	" "	"
.....	21·00	− 9·8	Dark yellow. Clear.....	"
Imported in bulk and bottled by Vendor. No marks on can.	22·20	−15·5	Yellow. "	"
Marked Chilliwack Honey, guaranteed pure.	22·40	− 6·0	Dark yellow. "	"
Imported from Honolulu.....	21·50	−22·5	Yellow. Slightly crystallized....	"
Wild Rose Brand taken from 20 lb. can.	26·80	−33·0	Brown. Muddy and dirty; flies in it.	May contain invert sugar; is not changed by acid treatment; doubtful.
Labelled Choice Honey.....	25·80	+66·0	Yellow. Chiefly crystallized....	Contains glucose syrup, adulterated.
Labelled Pure Honey.....	23·40	−12·3	Yellow. Clear	Genuine.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.
			DISTRICT OF VICTORIA—			
1908.						
Jan. 4	Honey....	34804	Geo. S. Pearson & Co., Nanaimo, B.C.	1½ lbs.	25	C. S. Stevens, Nanaimo, B.C....
" 21	"	34818	Windsor Grocery Co., Victoria, B.C.	2 "	75	W. R. Armstrong, North Saanich, B.C.
" 21	"	34819	" " ..	2 "	70	E. F. Robinson, Victoria, B.C...
" 21	"	34822	J. W. Speed, Victoria, B.C.....	2¼ "	60	T. B. Pearson, " ..
" 21	"	34823	" "	2½ "	75	F. J. Hughes, " ..
" 22	"	34825	F. P. Watson, "	2¼ "	75	Garcia Maginn, San Francisco..
" 22	"	34826	" "	2¼ "	75	Pacific Coast Syrup Co., San Francisco.
" 27	"	34831	Saunders Grocery Co., Victoria, B.C.	2¼ "	75	O. L. Charlton, Victoria, B.C..
" 27	"	34832	" " ..	2¼ "	75	John Stade, Chilliwack, B.C....
" 27	"	34833	W. O. Wallace, Victoria, B.C....	2¼ "	75	Mrs. White, Sidney, V.I.....

SESSIONAL PAPER No. 14

OF HONEY—*Concluded.*

Inspector's Report.	Water.	Polarization.	Physical Characters.	Opinion of the Chief Analyst.
D. O. SULLIVAN, INSPECTOR.				
....	17·95	– 0·5	Pale yellow. Partly crystallized.	Genuine.
....	20·50	– 2·0	Light brown. " ..	"
....	17·75	–11·8	Pale yellow. Clear.....	"
....	20·05	– 3·4	Brown. Partly crystallized.....	"
.. ..	17·90	– 4·0	" "	"
....	21·65	–16·1	Light brown. Partly crystallized.	"
....	15·90	–17·3	Pale yellow. Clear.....	"
....	16·35	– 2·0	Brown. Crystallized throughout.	"
....	24·15	–20·0	Brown. Partly crystallized.....	"
....	16·20	– 2·5	" "	"

APPENDIX O.

BULLETIN No 149—THE INSPECTION OF DOMESTIC WELLS

Ottawa, March 23, 1908.

W. J. Gerald Esq.,
Deputy Minister of Inland Revenue.

Sir,—Two established facts regarding typhoid fever, and enteric fevers generally, are the following :—1st, the contagion of these fevers is essentially water-borne ; 2nd, they are characteristic of the Country rather than the City.

It is true that, when one case of typhoid fever originates in a city, we may generally expect to find it not a solitary case ; indeed, a more or less extended epidemic is the usual history. In country places, it is on the contrary, quite usual to find the malady restricted to individual families ; and most physicians, having large country practice, are acquainted with households in which a more or less continuous succession of fever patients are found from one year's end to another.

It requires no great ingenuity to explain these phenomena. They are just what one might expect, who is at all well acquainted with the conditions of domestic water supply.

The procuring of a satisfactory supply of water ; the maintenance of such supply in a state of purity ; and the more or less frequent inspection of the article, to ascertain its character, are matters which must chiefly interest the localities concerned.

When, as in the case of most cities and towns, the municipal supply is obtained from a single source, the problem of inspection becomes a comparatively simple one.

It is otherwise with smaller towns and villages, and with farms, where wells, usually the property of individuals are in use.

It is true that the widespread danger to health and life which results from the pollution of the single supply, in the case of a city or town, does not obtain in the case of wells. Excepting the wells of public schools, hotels, and a few of more or less public character, the danger is usually restricted to a single family. But wells supplying lodging houses, eating houses, factories, and especially bakeries, breweries and creameries, must not be forgotton.

While it is practicable and sometimes not difficult to effectively protect from pollution the river, lake, or other source of city supply, the protection of well supplies is much less easy. This is partly due to their great number, partly to their usually being placed in close proximity to the house, stables, privy, &c., and chiefly to the ignorance and thoughtlessness of those who use them.

The chief danger of water pollution lies in the readiness with which sewage may find entrance to an otherwise satisfactory supply.

The term *Sewage* has primary reference to the waste water carried by the sewers of towns having systematic drainage. It is applied generally to water rendered impure by having dissolved in it, the soluble matter from manure, privies, or household waste. It is characterized by both organic and inorganic impurities. The organic matter in sewage is partly living (microbial), and partly non-living (albumin, urea, &c.).

These contents of sewage are not necessarily poisonous, in the strict sense; but, among the bacteria there may be those of specific disease (typhoid, diphtheria, &c.) In any case, sewage is an objectionable and disgusting constituent of water intended to be used for drinking and cooking, and it is dangerous, even if not actually toxic.

The organic matters of sewage are changed in character, and may even be completely destroyed, by filtration through sand or gravel, charged with such bacteria as are always found in what we may call *normal* conditions.

The characteristic feature of the most objectionable component of sewage, is its nitrogen. In whatever form this may originally have been present (urea, albumin or other proteid, &c.) it turns up under the influence of efficient filtration, as nitric acid, or may be completely removed, by the agency of plant life.

The inorganic impurities of sewage may be in part removed (phosphates, sulphates) but the chlorides remain.

Common salt (chloride of sodium) is the most characteristic and constant inorganic ingredient of sewage. It is present in most human food, is fed to cattle, horses, &c., as such; and in consequence of this, it finds its way into the urine and faeces, and into dish water and general household slops. It persists in sewage, even after this has been, as already described, purified by filtration. Hence the presence of chlorides in drinking water cannot be taken as a conclusive proof that such water is unfit for food. We may go so far as to say indeed, that no naturally occurring water is free from chlorides.

It remains true, however, that the ground water of every locality is characterized by a certain limit of chlorine (in chlorides), and any considerable increase in this normal limit, especially if it is a fugitive or temporary increase, must be held to indicate pollution by sewage, unless other explanation can be furnished.

The reasonableness of this statement will appear if we make a brief study of the conditions of well supplies.

In March, 1900, the writer presented this subject in an address to the Ontario Provincial Health Association, and may be permitted to make some quotations from that address.

'When rain falls to the earth it is either absorbed by soakage, or it flows along the surface to lower levels. Usually both flow and absorption take place, but the ratio between the quantity carried off by surface flow, and that absorbed, varies with the nature of the soil, the degree of slope, and other conditions.

When the surface is nearly level, and porous, as is the case with ordinary arable land, most of the water will disappear by soakage, and if the rainfall is heavy, the ground will be wetted to a great depth.

In the diagram (Fig. 1) the dotted portion represents a layer of porous soil, S—(which may be sand, loam, gravel, etc.), underneath which lies a non-porous layer, C

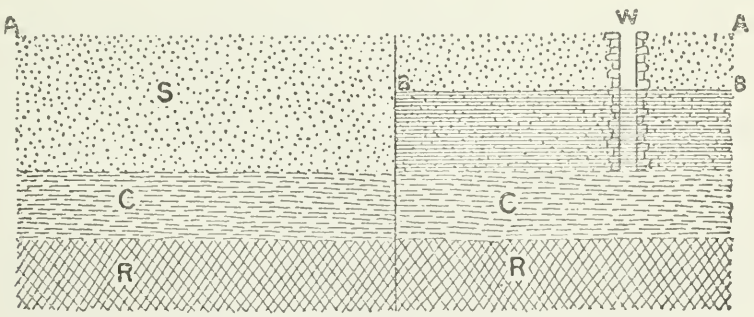


Fig. 1.

(clay), represented by short lines, and underneath this again is a layer of rock—R. The rain which falls on the surface A, will gradually sink through the porous soil till it reaches the impermeable clay; and shortly after the rain ceases, we may have the state

of things represented at the right hand side of the diagram, which shows the porous soil thoroughly soaked from the surface of the clay up to the level B. This last is the so, called *ground-water level ;* and it is evident that the depth of the ground-water level-below the surface level, will vary with the rainfall, and with the thickness of the stratum S : will be highest after heavy rain, and lowest after prolonged drought.

For every region an average may be struck, which is known as the mean annual ground-water level, and we may suppose B to represent this mean level for the area under consideration. If now, a well be sunk, as at W, to the clay, this well will contain water to the depth of the average ground water of the locality. If the well be carried lower, *i.e.*, into the clay, the result will not be to change the character of the water, but merely to enlarge the storage capacity of the well. Extensive areas of level land, as in prairie regions, beaver meadows, etc., answer to the conditions described ; but certain other characteristics of ground-water must be considered.

Ground-water is never stagnant, but is moving more or less rapidly towards some line of lower level, where a brook, or river, or lake will generally be found. In Fig. 2, D represents a section of a stream, whose waters will evidently rise and fall with the level of the ground water, which supplies them ; and we must discriminate between this rise and fall, which is always gradual, and that sudden rise, of short duration, which results from the surface flow immediately following heavy rain.

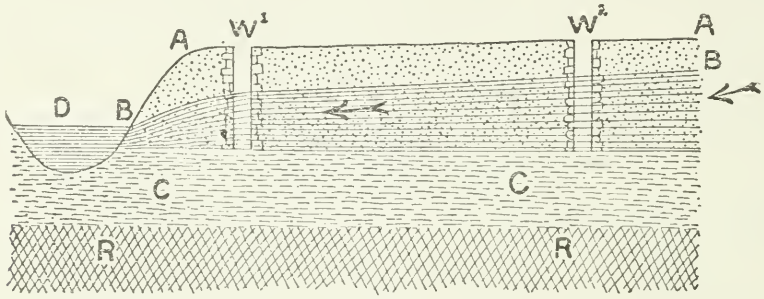


Fig. 2.

The flow of the ground-water will be in the direction indicated by the arrows, *i.e.*, at right angles to the course of the stream, and the line B B, will be a gradually sloping one, so that the well W^1 will contain less water than W^2 at the same time, although the wells may be of the same depth, and penetrate identical strata of sand, gravel, etc.

It must not, however, be supposed that stratification of so simple a type as I have described, is at all common. Soil, by which I mean everything that is not rock, has resulted essentially from the operation of chemical and mechanical forces upon solid rock. The chief of these forces have been, (1) the freezing of water in the pores of the rock, thus breaking it up ; (2) the action of rain ; (3) the alternate expansion and contraction by heat and cold ; (4) attrition of stone upon stone at the bottom of rivers and lakes ; (5) the movement of large ice masses (glaciers) ; (6) solution of certain rock components, with the consequent falling apart of the residue ; (7) action of the roots of plants, which action is both mechanical and chemical ; (8) chemical action by oxidation, formation of carbonates, etc. Many of these changes have taken place under water, and every part of the earth's surface has again and again been the bottom of lake or sea, so that soil formed by the means described, does not necessarily remain on the spot which produced it, but may lie hundreds of miles away. Thus, soils which have resulted from the attrition of rock masses in the regions round about Algoma, now cover the fields of Southern and Eastern Ontario. This sort of thing has happened the world over ; and the carriers of these immense masses of clay, sand, gravel and boulders, have been ocean and river currents ; but above all glaciers and icebergs.

An iceberg is not a large block of clean, pure ice, but a section of a glacier, broken off by the lifting power of the ocean when the moving mass has been so far thrust into its waters that their buoyancy overcame the strength of the ice, and a huge mass snapped off, rose to the surface, and was carried out to sea. This ice mountain contains, frozen into it, perhaps thousands of tons of rock detritus. It floats out to sea, and wherever it melts, this soil-forming material is deposited, perhaps forming a heap or hill, perhaps being strewed along the course of the floating bergs. After a period of submergence, which may be hundreds of thousands of years in duration, subterranean forces cause, what was so long sea bottom, to become dry land ; and we can imagine the condition of things described without too much difficulty, since a little observation of regions quite accessible to us, shows us very marked traces of the period itself. Of course the influence of new forces comes into play on what is now dry land. Atmospheric effects, vegetable and animal life, sunshine and storm play their part in altering the surface ; and in the end this comes to be just what we find it, the very ground upon which we build our houses and in which we dig our wells.

In Fig. 3 we have a somewhat more complex section diagrammed, representing a state of things much more usual than the very simple conditions described in Figs. 1 and 2.

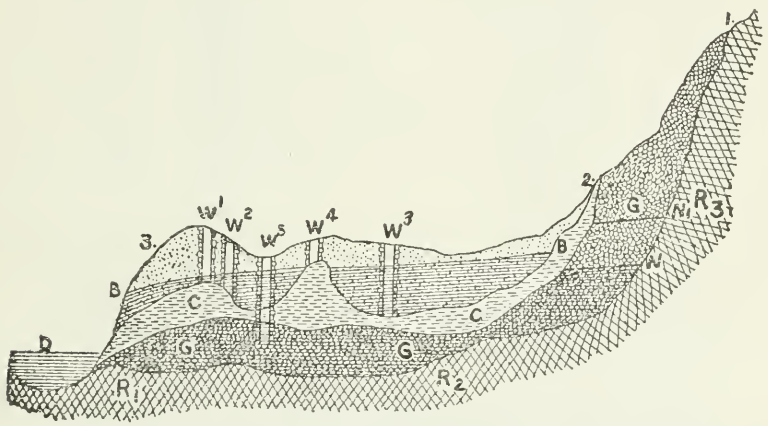


Fig. 3.

Here we have the rocky substratum R, more or less contorted throughout, and upheaved as a mountainous ridge at R^3. Conformable to the surface of the rock, but of varying thickness, we have a stratum of gravel, G, which crops out on the surface between 1 and 2. Lying on this gravel is a layer of clay, C, which varies in thickness, and comes to the surface at 2. Overlying this, is the soil, S. The line B^1B^2, represents, as before, the mean level of ground water, with a gentle slope towards the drainage stream D. The rain, which falls on the region 2 to 3, supplies this ground water, which is tapped by the wells, W^1, W^2, W^3. It is at once evident why a well at W^4 remains dry, or only contains water when the season is abnormally wet. The rainfall on the rocky surface to the right of 1, is of course not absorbed to any great extent, but flows down to the gravelly surface between 1 and 2, and together with the rain falling on this surface, is absorbed by the gravel, and finds storage in it between the rock (R) and the clay (C). Here it accumulates in a second and lower water-bearing stratum, and the normal level for this water supply may be represented by the line N. Now it is evident that if any of the wells W^1 to W^4 be continued through the clay, they will obtain a water supply from this lower gravel ; and the well W^4 can get a permanent supply from no other source. W^4 then becomes an illustration of a so-called 'deep well,' and in wet seasons, when the level rises above the normal N, say as high as N^1, this well will over-

flow, or becomes what is called a 'flowing well,' on the principle that water rises to the same height in all tubes connected with a common reservoir.

If I have succeeded in making my subject understood, we are now prepared to begin the special enquiry that I wish to propose for your consideration. Up to this point, I have merely defined and illustrated certain terms that I shall have to use repeatedly in the sequel. To recapitulate briefly, I have spoken of three classes ot wells, viz. : those fed from the normal groundwater, those fed from a deep or secondary water supply, and those so-called surface wells, which, like W^4 in Fig. 3, receive soakage water only, and contain a supply only when the ground in the immediate vicinity is wet, as in Spring and Autumn. All the ground-water wells diagrammed, are represented as dug down to subjacent clay ; but this is not a necessary condition. W^3 for example, would be none the less a ground-water well, had it been made no deeper than W^1 and W^2. We have now to consider the character of the water which fills these three types of wells.

Rain water is not the chemically pure substance which it is often described as being. In the later stages of a prolonged rainfall, it is indeed very nearly pure, but the first portions of every shower wash out from the air, not only the gaseous impurities, which are the products of animal and vegetable decay—(Ammonia, compound or organic ammonias, sulphuretted hydrogen, etc.)—but also those solid particles, rich in microbial life, which form the dust of the air, and are partly organic and partly inorganic in character. This rainwater, falling upon the surface of the ground, flows along this surface, or soaks into it, taking momentarily into solution more and more of the soluble matters with which it comes into contact. These are partly inorganic salts, chlorides, sulphates, carbonates, silicates, etc.—and partly organic matters of more or less complex nature, the products of the decay of vegetable and animal matter. If, for example, in Fig. 3, the region 2 to 3 is a cultivated farming country, somewhat sparsely inhabited, the organic impurities will chiefly be of a vegetable kind—rotting vegetation, the manure of the fields, etc. ; but if it be a village or town, the organic matters will be more largely of animal, and especially of human origin. To these waste products the term sewage is properly applied. The ground-water of this region may be, therefore, much less pure than was the rain water that fell on the surface gathering-ground. I say *may be*, for reasons which will be presently given.

We may dismiss the *inorganic* impurities with a word, by saying that, unless they are present so largely as to give a distinct taste to the ground-water, they are rarely of a kind to be dangerous to health. The *organic* matters must be more carefully considered. If they have originated in normal decay, they may be harmless from the point of view of health, even though far from appetizing when we remember their origin ; but if they come from those conditions of decay which we call *disease*, they may be actively poisonous, and may contain the living germs of specific diseases, such as fevers, diphtheria, cholera, etc.

Percolation, through a fully ærated soil, has, however, the effect of bringing about purification of such water by the process of oxidation, a process by which organic matter is changed and microbial life destroyed. That this should be effective, the water must filter through several feet of sand or gravel ; and although it is impossible to fix a definite minimum limit to the depth of such a natural filter, it is safe to say that we should insist on ten feet, at least, and prefer as much more as we can get. To this end it is necessary that the upper ten feet of the wall of a well should be made quite impervious to water, and the accompanying diagram shows how such a construction can be brought about.

A well should be so constructed that no water could find entrance to it without filtration through a depth of soil, at least equal to the vertical distance between the ground level, and the lowest level of ground-water. To insure this it is necessary to have the mouth of the well raised a foot or more above the surface of the surrounding soil, and to have the brick (or stone) lining of the well backed up by a layer of puddled clay, a foot or more in thickness, and extending continuously from the level of the ground water quite up to the mouth of the well.

DIAGRAM of well: showing a backing of puddled clay or other impermeable material between the brickwork and the porous strata through which the well is dug.

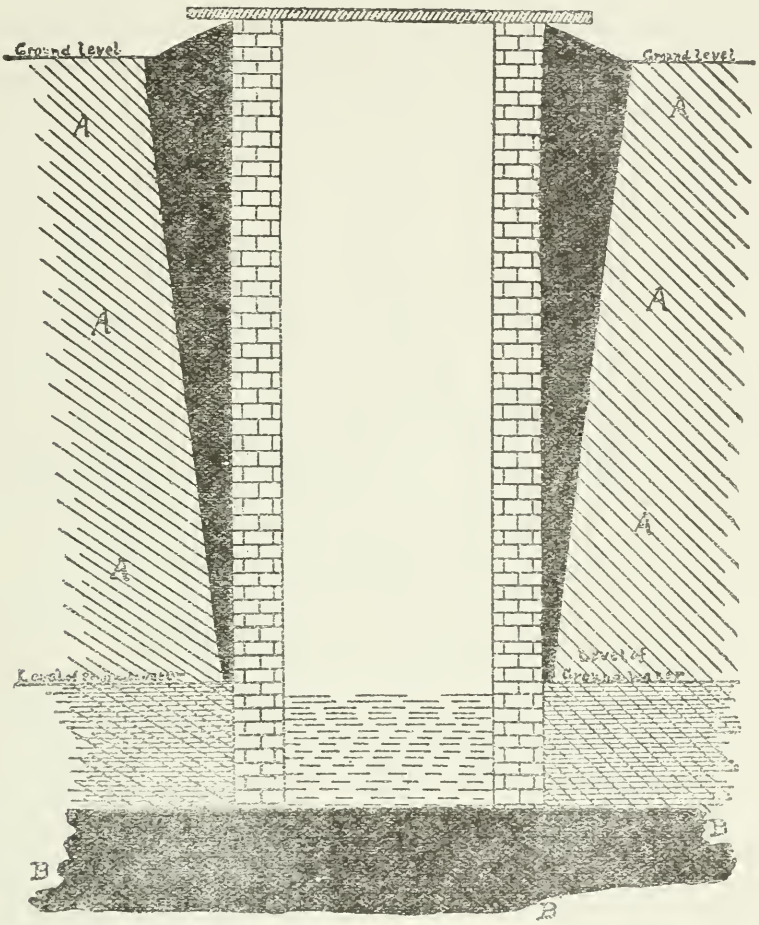


FIG. 4.

A—porous strata, such as sand, gravel, loam, shale, etc. B—impervious stratum, such as clay, rock without flaws, etc.

The accompanying diagram will serve to explain what is meant. By this construction surface water is prevented, by the impermeable clay backing, from getting entrance to the well until it has percolated through the earth to the line of level of the ground-water.

It will be quite clear that no one of the wells in Fig. 3 can be free from unfiltered, and consequently dangerous water, unless this precaution is taken, since even those which reach the ground-water may be polluted by the soakage of unfiltered surface water.

If now we study the gathering ground 1 to 2 in Fig. 3, we have a wild, rocky, and probably unsettled tract of land, free from animal impurity, and comparatively free from vegetable decay. Moreover, its distance from the point at which the water collected on it is used (W^5), ensures thorough filtration, and we can see at once why the water of this deep stratum should be eminently pure and wholesome. Such water is, for obvious reasons, apt to contain more mineral matter in solution, and may even con-

form to the type of a true mineral water. Unless this be the case, it is evidently a very desirable domestic supply, and wells like W^5 are always to be preferred when attainable. Even these, however, must be protected against soakage contamination, to which they are just as liable as those of any other type. This study has shown us that shallow wells, obtaining as they do, their supply from unfiltered soakage can never be safe for domestic use, although favorable circumstances may prevent them from becoming actively disease-producing; that ground-water wells, if properly protected from local contamination by soakage, are generally safe; while deep water wells, guarded from local soakage, are safest of all.

This study of well-water, in its origin, makes it quite easy to understand why the water contained in one well may be so different from that contained in other, and perhaps, contiguous wells.

Large towns and cities, as a rule obtain their water supplies from some single source, so that each family in a city of say 5,000 families is supplied with water of the same kind as the rest. It consequently becomes a matter of small cost to each family, to take care of this common source of supply, to have it examined from time to time, chemically and otherwise. There is generally a Board of Water Commissioners appointed to look after the matter, and an engineer whose special duty it is to see to the protection of the supply and its proper distribution.

Compare this with the case of 5,000 families resident in the country. It is probable that these obtain their supply from 5,000 different wells, each having its own peculiarities of situation and protection, and each well having a special interest only to the particular family drawing water from it. If the owner of one of these wells desires to have it examined with a view to determining its purity, the total cost of such examination falls upon himself, and any opinion procured by him, has no value for his neighbours, and does not help them to a conclusion as to the purity of their wells.

Can no way be devised whereby useful information regarding the safety of country wells may be obtained, which will be comparatively inexpensive, and therefore practicable? This is the question which I seek to answer affirmatively.

In the first place we may conclude that normal ground-water is a safe source of supply. Owing, however, to the fact, that the soil and sub-soil of one locality differs from that of another locality in nature of constituent materials. their depth, compactness or porosity; contiguity to neighbouring heights of land, or to swamp; as well as in amount of annual rainfall, we cannot expect ground-water to have the same characters everywhere. What we may expect is that in a given geological and topographical area, the ground-water will have a certain definite character. If the soil consist largely of limestone *debris*, we shall find bi-carbonate of lime in the water, if gypsum characterize the soil of the locality, we shall find sulphate of lime in the water, if chlorides be present in the soil, then chlorides will be found in the water, and so on. In a neighbouring area, separated, say, by a ridge of granite from the first, and having a soil resulting chiefly from the weathering and disintegration of granite, we shall find a ground-water much softer than the first, and having small quantities of silicates, and other products of the disintegration of granite in solution. Now all the wells, and there may be hundreds of them, which are dug into this ground-water, will fall into a class by themselves, and exhibit common characters, provided that local soakage is prevented and the water they contain be the uncontaminated ground-water of that region. How then will an individual well be affected, in whose case sewage finds entrance? Organic matter will increase, and especially will this be true of nitrogenous organic matter: phosphates and chlorides will be increased, nitrates and nitrites may be found in it, and a bacteriological examination may reveal the presence of the colon bacillus. To determine all this, a full analysis is of course needed. What I propose to do, is to confine attention to one characteristic, and to select that one which is most surely and certainly determined. This I find to be the *Chlorine in Chlorides*.

The determination of chlorine, in chlorides, is one of the simplest and most definite estimations that a chemist can be called upon to make. Owing to the presence of common salt (chloride of sodium) in human food, and its use by domestic animals, it is always

found in sewage, so that any notable admixture of sewage with a well water, at once raises the chlorine percentage.

Chlorine is, however, invariably present in normal ground-water, and the question arises for each region: "How much chlorine is normally present in the ground-water of this locality?" Of course the answer can only be given after analysis of normal samples, but once it is known, any marked variation from that standard, stamps a well of that region as suspicious, and justifies discontinuance of its use until fuller examination can be made. It must not, however, be forgotten that contiguous wells, like W^2 and W^5 in Fig. 3, may obtain their water from entirely different sources, so that it becomes necessary to take depth, and other factors into consideration. The lower or second water-bearing stratum may have a very different normal content of chlorine from the first, or ground-water proper; but its number will also be a fixed one, and if once known, it will be as easy to detect any sewage contamination in this kind of well as in the other.

It is also to be noted that the normal chlorine number for a given area, will vary from month to month, and will be especially affected, by unusually heavy rainfall, or by prolonged drought. But experience shows that variations, due to these causes, are insignificant in comparison with those resulting from sewage contamination.

For many years past I have endeavoured to put this method to the test of experiment, and for that purpose I have collected personally and by deputy, over 730 samples of well water, chiefly within the drainage area of the Ottawa Valley. The difficulties which lie in the way of any single individual's accomplishment of so gigantic a task as this, are almost insurmountable; and I can only hope to illustrate the subject in a very imperfect way from the data in my possession. The first difficulty is to obtain samples which represent the normal ground-water, and the normal deep water supply or supplies. Very few country wells are protected against surface soakage by the method indicated in Fig. 4, and I may say here, that I think the Provincial governments might profitably entrust to certain of their officials whose work takes them to different parts of the country, as in the case of the Road Inspectors, the Board of Health Officers, &c., the additional duty of seeing that new wells are properly protected from surface drainage. It costs very little more to properly protect the well by tamping clay behind the stones when the well is being made, or by using concrete, than to finish it in the unscientific way in which we find this important matter usually performed, and I am sure that it is ignorance rather than any wish to save a few dollars at the risk of health, which explains the unsatisfactory condition of nearly all the wells which I have visited.

If, in each topographical area, we could find a few thoroughly protected wells, of known depths, and of whose history a full record had been kept, we should possess the data which we require, and which we cannot now obtain with any such certainty as would give a sure basis for the illustration of the scheme I have suggested.

It is by so much the more important that new wells should be constructed in such a way as to fulfil these conditions.

On 13th October, 1899, I personally visited forty-three wells, chiefly on farms, in the district between Kinburn and Pakenham, in the county of Lanark, This is an extensive clay region, fairly level, except quite near Pakenham, where the land dips towards the Mississippi river. The Mississippi rises in a series of small lakes, about eighty miles west of Pakenham, in the townships of Abingdon, Barrie and Clarendon, in Addington county. These townships are very thinly settled, and the whole course of the river is through a region but little affected by human habitation. With the exception of the towns of Perth and Almonte, it may be said to be quite as nature left it, and a purer gathering ground could not be wished. This is proved by the fact that a sample of the river water taken at Pakenham gave only two parts of chlorine per million. No doubt, this small content of chlorine is chiefly derived from sewage, for, although the organic matter of sewage may change by oxidation as already explained, the chlorine remains, to tell the tale of past sewage pollution. In the case before us, the amount is too small to give any concern for the purity of the river water. No doubt there are points on the river, (*e.g.* just below the town of Perth) where locally, a higher chlorine figure would be found, pointing to local and serious sewage contamination. But the volume of the river is so large, that by the time the sewage has distributed itself uniformly

throughout it, the figure 2 per million, for chlorine, has been reached, and the organic impurities have been fully oxidized.

The following numbers were obtained for seven wells in the region referred to, the wells having a depth of less than 10 feet, and being of the kind called surface wells :—

Well.	Depth.	Chlorine per million.	Well.	Depth.	Chlorine per million.
1	9 feet	4	5	8 feet	26
2	9 "	10	6	7 "	32
3	9 "	22	7	8 "	180
4	10 "	22			

Why are these numbers so much higher than the river water gave? There is but one answer—the wells are dug in soil which is more or less saturated with sewage. Not one of these wells, so far as I could learn, was protected by a clay backing (see Fig. 4) from soakage, and consequently, most of them are contaminated with sewage which has undergone no such amelioration by soil-filtration as would have resulted from proper construction. Not one of them is certainly a safe well, while No. 7 cannot but be a most dangerous supply.

In the following table I have placed the numbers resulting from examination of 21 wells, varying from 10 to 20 feet in depth. These samples were taken on the same day, and from the same region :—

Well.	Depth.	Chlorine per million.	Well.	Depth.	Chlorine per million.
1	20 feet	4	12	17 feet	84
2	12 "	4	13	20 "	54
3	16 "	4	14	17 "	88
4	18 "	6	15	12 "	90
5	18 "	14	16	13 "	92
6	15 "	16	17	13 "	98
7	12 "	22	18	12 "	114
8	15 "	24	19	18 "	128
9	13 "	32	20	18 "	194
10	14 "	32	21	12 "	370
11	12 "	44			

It is quite likely that most of these wells derive the main portion of their supply from the ground-water of the locality, but it is very certain that most of them are contaminated with soakage water. The first four are among the deepest of these wells, and as likely to be true ground-water wells as any, yet their chlorine content is not high, in fact, the very highest chlorine numbers in this list correspond to decidedly shallow wells, whose contamination by sewage is beyond a doubt.

The following six wells are examples of deep wells, and should give pure water; if properly protected from soakage of surface water. This they are not, however, and I cannot feel sure that the chlorine they contain is not, at least in part, due to sewage.

Deep well.	Depth.	Chlorine.	Deep well.	Depth.	Chlorine.
1	25 feet	24	4	25 feet	170
2	35 "	56	5	25 "	195
3	46 "	58 (in rock)	6	25 "	240

Two wells in this region answer to the type of mineral springs. They contain respectively 3775 and 3700 parts of chlorine per million. It is quite evident that this chlorine has a mineral, and not a sewage, origin, and I mention them to show how marked a distinction exists between such wells, and the ordinary domestic well.

Later in October, I collected, partly in person, and partly by deputy, seventy samples of well waters along the Montreal road, through the villages of St. Joseph,

Blackburn and Cyrville, and the adjacent country. Of the wells less than ten feet deep, eight contain less than eight parts chlorine per million and thirteen others gave chlorine varying from 16 to 250 parts, six wells yielding more than 100 parts per million. Most of these wells were so evidently unprotected that I was prepared to find them dangerously contaminated, as the result showed them to be.

Of thirty-one wells having a depth between ten and twenty feet, only two gave less than 10 parts of chlorine; fourteen gave more than 100 parts, and five more than 200. There can be no doubt whatever, that most of this chlorine has a sewage origin.

Of deep wells the following is the record:—

Deep well.	Depth.	Chlorine.	Deep well.	Depth.	Chlorine.
1.....	?	2	6.....	22 feet..	86
2.....	21 feet..	6	7.....	?.....	110
3.....	26 " ..	26	8.....	27 feet..	280
4.....	30 " ..	52	9.....	23 " ..	670
5.....	96 " ..	52	10.....	155 " ..	860

It is noteworthy that the increase in chlorine corresponds to an increase in depth, if we omit the numbers six, eight and nine in this list. Number six is in a hotel yard, and the well is not properly protected; number eight is twenty-five years old, has no pump, and shows every sign of neglect in its surroundings, and number nine is eighteen years old, not protected from soakage, and dug in soil which has been used as a garden and otherwise from immemorable time.

I have made, at different times, similar collections of well-water samples near Peterboro, near Hamilton, and at several places nearer Ottawa. The analytical data have a special interest for the neighbourhood in question; but for such a general study as we are now making, it seems scarcely worth while to quote them. They emphasize the point to which I have already alluded, viz.: the difficulty of ascertaining the true chlorine value of normal ground-water. If any considerable number of properly protected wells existed in a given locality, there would be no difficulty about this matter, or at least, the difficulty would be much lessened.

As already pointed out, this work is properly the duty of township and village municipalities. During the eight years which have elapsed since I brought it to the notice of the Provincial Board of Health of Ontario, no attempt has been made by any municipality, so far as I know, to carry out the plan then outlined.

Because I am impressed with the importance of the subject, I have asked and obtained your permission to make some further investigations; and the subjoined report upon inspection of wells in the towns of Oakville, Weston and Richmond Hill, forms a second attempt to demonstrate the usefulness of the method of testing well supplies, which I have just described.

I may explain that I do not consider the subject as one properly belonging to this Department of the Public Service; and it is rather as an object lesson, than with any view to its further prosecution, by the Department of Inland Revenue, that I have recommended the undertaking of the work now reported. The municipalities immediately concerned are the proper agents in the matter. They are best acquainted with the details necessary to give maximum value to the investigation. It will be seen that the information obtainable in a hurried visit to distant towns, is far from complete or satisfactory. The depth of the wells, their age, the frequency with which they are cleaned, their protection, construction and other features; the depth of water which they contain at different seasons of the year; the nature of the strata which they penetrate, and many other details, are either quite unknown, or very imperfectly known to me. It would be a matter of no great expense for each municipality interested to obtain and record this information; and such a record would be of immense value to the chemist in forming his opinion.

The work recorded in the accompanying tables has been done upon 32 wells in each of the towns of Weston and Richmond Hill, and 64 wells in Oakville Ont.

The information obtainable in regard to the wells was so very limited that I have sought to secure a basis for interpretation of analytical results, by doing a much greater amount of work upon these samples than is contemplated by the plan already described. Thus, in addition to determining the chlorine values, I have determined the alkalinity, and the temporary and permanent hardness. This is done in order to ascertain whether the water supplied by neighbouring wells, of similar depth, is derived from the same ground-water.

The information thus obtained is far from satisfactory. Where a well is walled up with limestone, the hardness of the water will be much affected by this fact, and further influenced by the length of time that the water lies in contact with the stone.

By much the best way to get the information needed for interpreting results of analysis, is to have it at first hand, from the well-digger. The date of sinking, the depth, the nature of the soil, the protection of the well, the extent of flow, the variation of level with the season, frequency of cleaning, &c., these are the important facts needed, and they could easily be ascertained by local endeavour. A stranger visiting the town for a day or two, is fortunate if he secures the water itself, and a chance hint or two regarding the well.

The depth of the well, as given in the tables, is, in most cases mere guess work; an approximation made by the man employed as a guide.

The time of the year is favorable to the protection of wells from fresh sewage; so that much would be learned in regard to the safety of these wells, if a comparison could be instituted between their chlorine value as here recorded, and that found in April or May, when the frost is out of the ground.

Such conclusions as I think can safely be reached, are noted in the tables. The number designating each well, enables its location in regard to other wells, to be seen by reference to the accompanying diagram.

The order in which the wells appear in each table is chosen so as to put contiguous wells together, as far as possible. Where a considerable distance is known to separate wells, a line is left blank in the table. It will not do, however, to interpret juxtaposition of numbers in the table, as indicating juxtaposition in the wells. The linear distance between one well and the next, is unknown to me. In some cases it may not exceed 100 feet; in other cases it may be a quarter of a mile. It is evident that exact knowledge on this point, while easily attainable by the local authorities, would require the expenditure of much time and labour on the part of a visiting inspector.

All other information needed to make the tables useful, is contained in the column headed 'Remarks.'

Finally I would draw attention to the fact that the results contained in these tables cannot be expected to greatly interest others than the residents of Weston, Richmond Hill and Oakville, except in so far as they throw light upon the application of the method of inspection which I have already described.

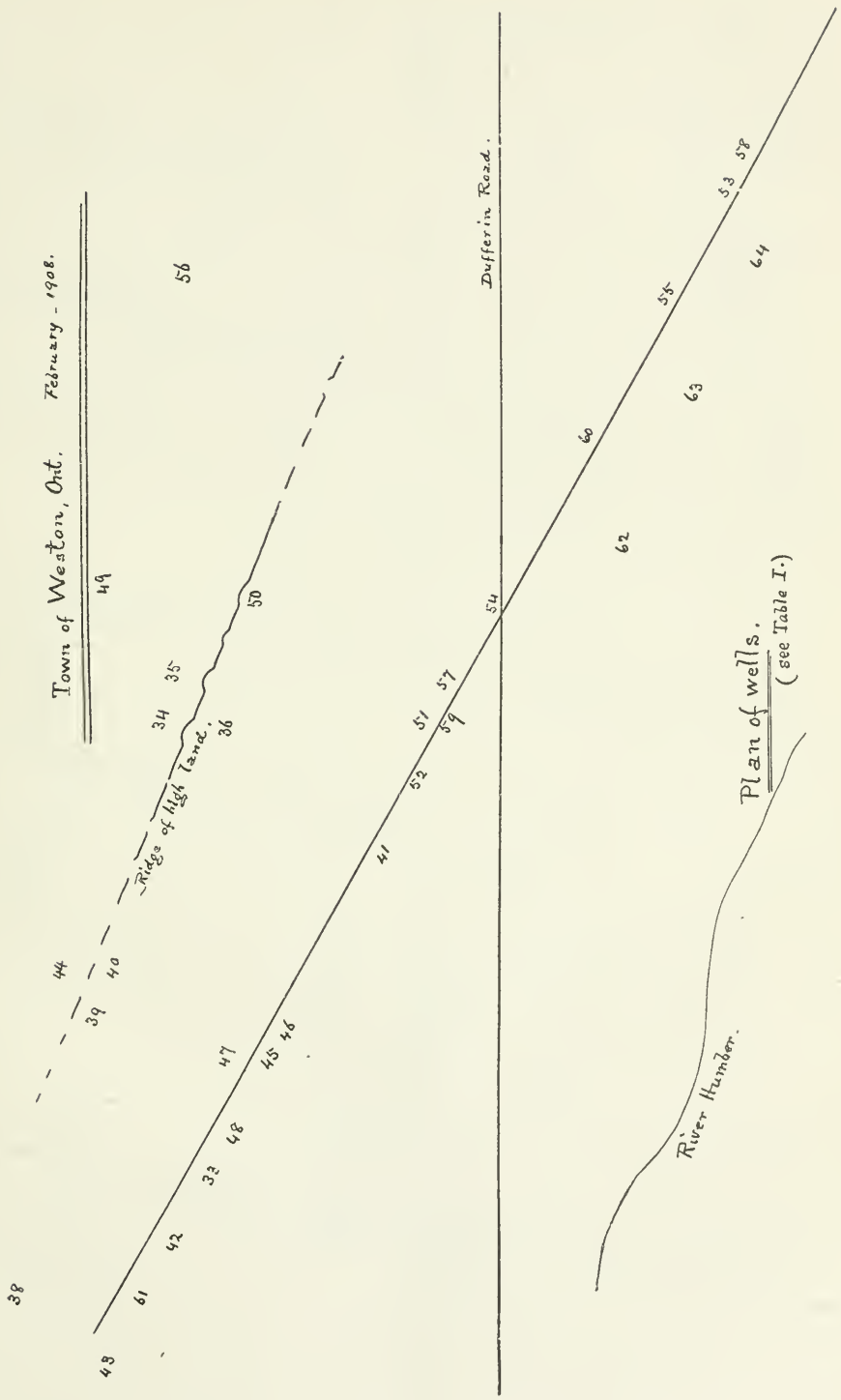
Even to the municipalities named, they only serve as the beginning of an investigation, which if completed at all, must be completed by themselves. The town of Oakville, probably contains over 500 wells. Thus it will be seen that the sampling of sixty-four, selected almost at random, and examined only once, cannot be regarded as more than a very superficial treatment of the question. I trust that we shall hear further of the matter.

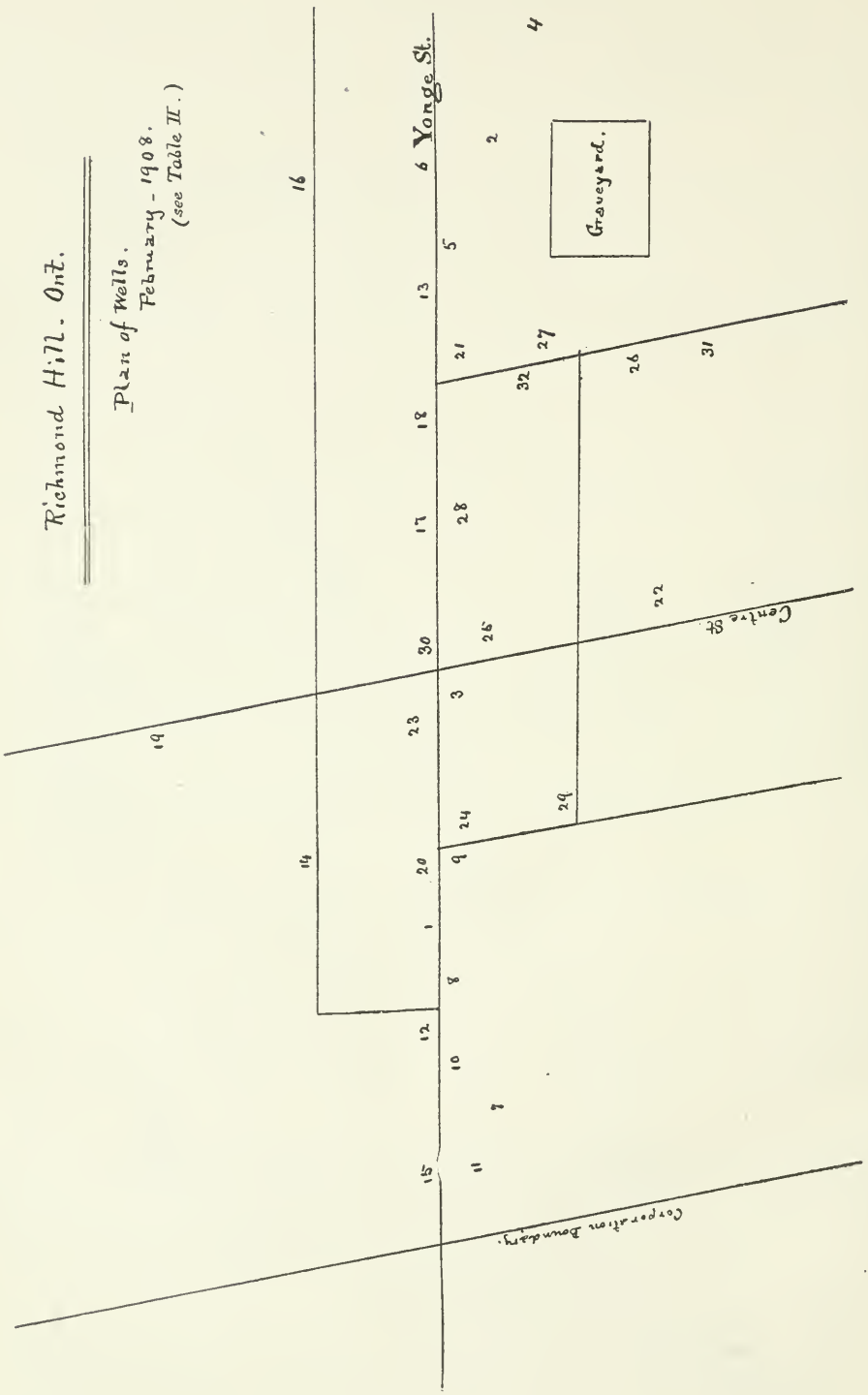
This is not alone a subject of interest to country and village dwellers. Very large numbers of city people spend their summers in the country, and make use of well-water. Every autumn finds them bringing back to town a certain amount of typhoid fever, contracted doubtless, through the use of impure well-water. This is an aspect of the case which may reasonably appeal to city dwellers.

I beg to recommend the publication of this report as Bulletin No. 149.

I have the honour to be, Sir,
Your obedient servant,

A. McGILL,
Chief Analyst.


Town of Weston, Ont. February - 1908.
Dufferin Road.
Ridge of High Land.
River Humber.
Plan of wells.
(see Table I.)


Richmond Hill. Ont.
Plan of Wells.
February - 1908.
(see Table II.)
16
6 Yonge St.
Graveyard.
Centre St.
Corporation boundary.
19
14
4
2
5
13
21
27
32
26
31
18
17
28
22
30
25
3
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24
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7
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11

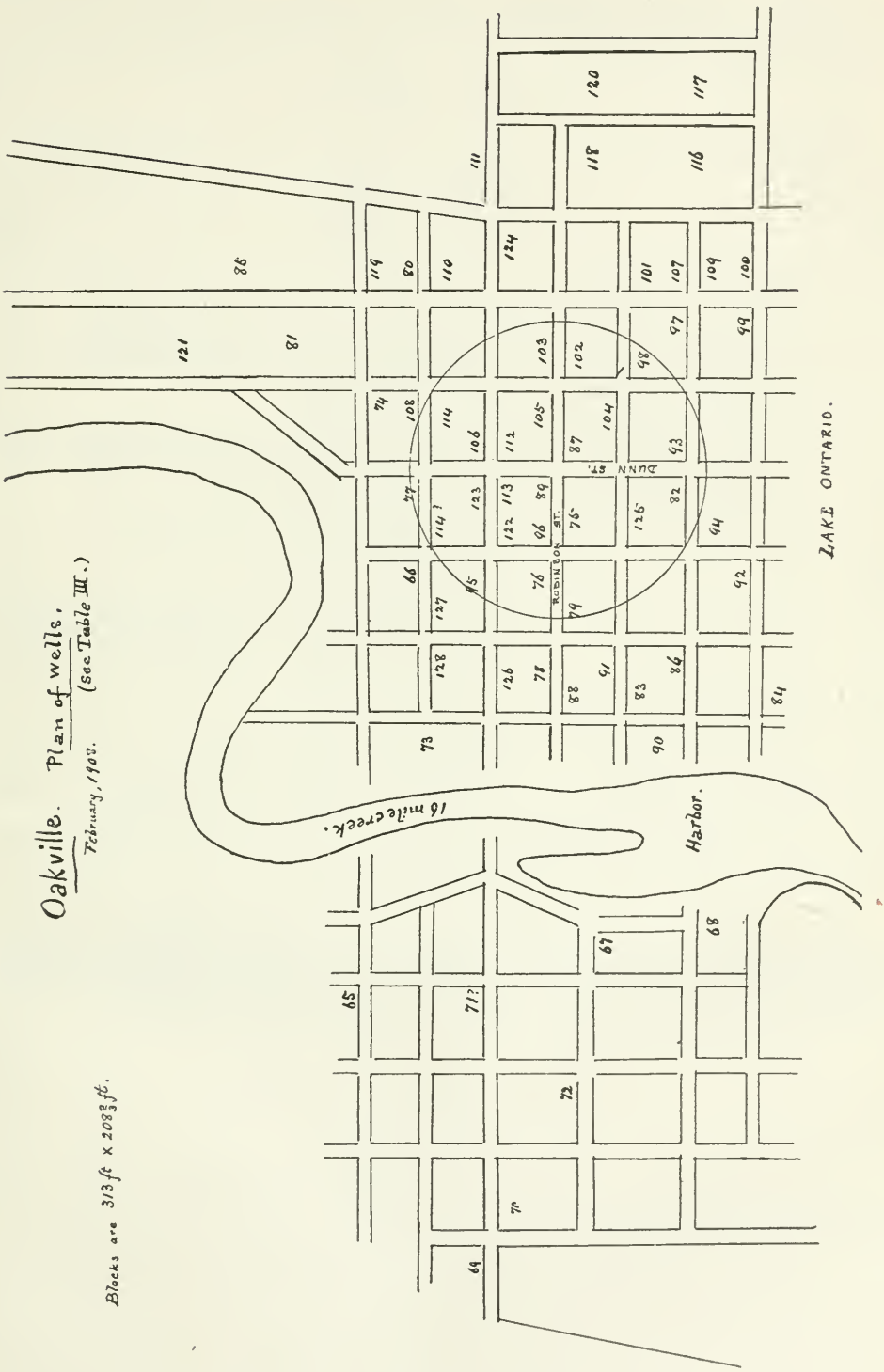
Oakville. Plan of wells.
February, 1908. (See Table III.)
Blocks are 313 ft x 208⅔ ft.
16 mile creek.
Harbor.
LAKE ONTARIO.
ROBINSON ST.
DUNN ST.

TABLE I.—WELL WATERS—TOWN OF WESTON, ONT., FEB., 1908.

Number.	Depth in Feet.	Description.	Chlorine per Million.	Alkalinity.	Hardness.			Remarks.
					Total.	Permanent.	Temporary.	
43	22	Old, brick, iron pump.....	24	120	207	84	123	
61	?	Brick, wood pump.....	28	112	146	28	118	
42	12	Brick, wood pump, with strainer...	20	106	157	60	46	
37	?	New stone, iron pump.....	202	129	291	175	116	This may be mineral chlorine.
33	?	Brick, wood pump.....	40	112	140	22	118	
48	?	Old stone, wood pump.....	162	140	246	118	128	
45	15	Iron pump.....	62	260	342	73	269	
46	Shallow	Brick, iron pump.....	54	207	302	151	151	
47	14	Brick, wood pump.....	122	109	268	162	106	These high chlorides suggest sewage.
41	10	Old well, wood pump.....	34	151	190	34	156	
52	16	Stone, wood pump.....	14	115	123	0	123	
51	17	Old, brick, wooden pump....	94	168	269	112	157	Is suspicious.
57	30	Iron pump, brick	392	339	420	89	331	This should be looked into,
59	25	" "	56	154	235	90	145	
54	20	Wood pump, brick.....	36	168	241	90	151	
60	19	" "	42	120	235	140	95	
62	15	" "	16	87	64	0	64	The low chlorides in these wells is a proof that the normal ground water in the East end of Weston, does not contain mineral chlorine, except in traces.
55	10	" "	8	88	106	11	95	
63	30	Iron pump, brick.	18	154	185	28	157	
53	30	Wood pump, brick....	18	112	151	28	123	
58	?	" "	16	129	146	11	135	
64	20	Iron pump, brick.....	20	106	134	28	106	
38	102	Iron pump, new well..	18	190	84	23	61	
39	?	Old well, brick.....	46	126	196	56	140	
49	20	Old well, brick.....	106	129	280	179	101	Very suspicious.
44	30	Old, wood pump...	76	146	151	28	123	
34	20	Wood pump, brick.....	14	95	140	39	101	
35	?	" "	54	109	174	95	79	Why are these wells higher in chlorine than is No. 34?
36	20	Iron pump, brick	50	109	190	75	115	
49	30	" "	34	92	118	50	68	These are isolated wells, and no comparisons are possible.
59	22	Brick, cement, top, iron pump, 13 years in use..... ..	72	137	213	95	118	
56	20	Iron pump, brick.....	32	160	207	78	129	

NOTE.—Alkalinity, is an expression, in terms of CaO, for the total bases existing as Carbonates. Hardness, is an expression, in terms of CaO, for the total alkaline earth bases (essentially lime and magnesia) present in solution. Hardness is known as 'permanent' when these bases are in combination as Sulphates or Chlorides, and as 'temporary' when they exist as Carbonates. When the Alkalinity is notably in excess of the temporary hardness, this is due to the presence of Sodium Carbonate in the water.

SESSIONAL PAPER No. 14

TABLE II.—WELL WATERS, TOWN OF RICHMOND HILL, ONT.—FEB. 1908.

Number.	Depth in feet.	Description.	Chlorine per Million.	Alkalinity.	Hardness.			Remarks.
					Total.	Permanent.	Temporary.	
15	20	Stoned, wood pump	80	123	235	112	123	The shallow well is higher in chlorides. This is suspicious.
11	30	Brick, wood pump	34	156	146	17	129	
7	75	Iron pump, wind driven	92	207	302	101	201	
10	20	Old well, wood pump	46	199	263	67	196	Water of similar character.
12	20	Iron pump, brick	68	207	235	28	207	
8	20	Old well, wood pump	148	232	392	208	184	The high permanent hardness is noteworthy also high chlorine. Compare with No. 9.
1	20	Iron pump, stoned	80	224	252	84	168	
20	20	Iron pump, brick	56	224	246	22	224	
9	25	Brick, old wood pump	110	168	297	129	168	
24	20	Iron pump, brick	60	157	202	45	157	
23	15	Wood pump, cement top, springs from quicksand	22	162	196	28	168	
3	38	Brick, wood pump	36	151	213	45	168	
30	33	Iron pump, brick, water salty	570	356	342	11	331	A 'mineral' water?
25	20	Old well, bricked, wood pump	94	132	280	168	112	
17	25	Brick, iron pump	48	216	224	0	224	
28	20	" "	46	148	179	28	151	
18	30	Wood pump, brick	780	216	414	218	196	Is this mineral chlorine? Is of suspicious character.
21	30	Brick, wood pump	52	174	224	50	174	
32	30	Wood pump, bad platform	178	194	386	185	201	Suggestion of past sewage pollution
27	80	Wind mill pump, water from sand	164	235	409	234	175	
26	30*	Brick, cleaned 4 mos. ago	40	137	168	28	140	
31	55	Flowing well	26	132	129	0	129	
13	30	Stone, wood pump	52	168	252	95	157	
5	20	Wood pump, bricked	10	150	140	28	112	
6	26	Brick	98	160	274	129	145	
2	30	Iron pump	32	143	162	22	140	
4	?	Wood pump	22	160	162	0	162	
16	40		136	174	246	123	123	Chlorine is suspiciously high.
14	20	Brick, wood pump	76	179	224	62	162	
19	15	" "	48	140	174	45	129	
29	20	Brick new well	56	126	123	11	112	
22	20	35 years old, brick, wood pump	132	134	308	168	140	Chlorine is high, but may have a mineral origin, as the permanent hardness suggests.

TABLE III.—WELL WATERS, TOWN OF OAKVILLE, ONT.—FEB., 1908.

Number.	Depth in feet.	Description.	Chlorine per Million.	Alkalinity.	Hardness.			Remarks.
					Total.	Permanent.	Temporary.	
77	15	Iron pump, stoned	34	123	134	22	112	This group of 22 wells, situated within
114	15	Open well, stoned	30	101	129	28	101	a square of about 16 blocks, would
95	16	Iron pump, cement curbing	60	148	190	50	140	form an interesting study if they
123	?	Iron pump, stoned	530	381	392	50	342	had the same depth, or if their in-
106	16	Iron pump	56	171	241	101	140	dividual depths were accurately
122	12	Pump in kitchen connects both with well and cistern	98	154	252	140	112	known. Considering those of about 15 ft. deep,
113	?	Iron pump, stoned	86	134	230	118	112	the chlorine content should appar-
112	13	Stone, iron pump, sand	36	101	151	62	89	ently be less than 100 parts per
76	15	Open well, stoned, low ground	970	221	347	168	179	million.
96	?	Iron pump, stoned	160	244	302	140	162	What then is the meaning of the
89	15	Open well, stoned	74	126	218	112	106	numbers found for No. 76, 96, 102
105	38	Stoned, iron pump	20	146	140	0	140	and 82?
103	16	Tiled, iron pump	24	140	146	6	140	Nos. 105, 103, 79 and 87 show a very
79	18	Iron pump, stoned	10	112	112	11	101	low chlorine content. Why so high
75	15	"	70	179	230	101	129	chlorine in the remaining wells of
87	14	Open well, stoned	16	146	151	14	137	the group? These questions can
102	15	No pump, stoned	170	157	286	151	135	only be answered by further exam-
104	14	Open well	92	151	235	123	112	ination. But they should be dis-
125	?	Iron pump, stoned	72	154	202	84	118	quieting to the residents of this part
82	15	"	148	148	286	146	140	of the town.
93	15	"	28	143	174	50	124	The hardness in Nos. 123, 76 and 96;
98	12	Stoned, no pump	36	120	168	84	84	also 102 and 82 implies that these may be fed from a distinct source.
97	?	Iron pump	300	134	381	246	135	So little is known about the wells of
101	?	No pump	70	148	202	62	140	this group, that no certain inference
107	?	No pump, stoned	18	70	78	6	72	is possible. If Nos. 107 and 109 fix
109	?	Iron pump	16	104	112	0	112	the chlorine of the region, the others
100	?	"	196	193	392	252	140	should be further examined.
99	15	No pump, stoned	54	104	157	73	84	
92	18	Open well, stoned	66	224	252	84	101	
94	20	"	40	188	241	84	157	
83	?	Iron pump, stoned	78	188	276	112	164	
86	18	"	56	148	190	62	138	
88	?	Iron pump, stoned	144	151	314	168	146	
91	14	Open well, stoned	58	126	185	84	101	
78	14	Open, stoned	24	92	101	17	84	Not used for cooking, &c. Why has
126	?	?	190	231	188	0	188	this well a bad reputation?
66	15	Open well, stoned	58	154	246	112	134	
127	?	Iron pump	80	171	213	112	101	
128	20	Iron pump, stoned	34	146	78	0	78	
74	?	"	64	146	202	112	90	
108	13	Iron pump, tiled	32	87	84	6	78	
80	36	Open well, stoned	64	140	140	17	123	
119	15	Stoned, iron pump	30	120	118	0	118	
110	14	" "	64	179	224	84	140	
118	15	Open well, stoned	52	157	185	73	112	
120	20	Iron pump, cement platform, stoned	16	126	140	56	84	Said to have "sulphur" smell at times.
116	16	In shed, iron pump	96	165	252	50	202	
117	63	Iron pump, Artesian, 53 feet in rock	20	140	146	0	146	

TABLE III—WELL WATERS, TOWN OF OAKVILLE, ONT.—FEB. 1908.—*Concluded.*

Number.	Depth in feet.	Description.	Chlorine per million.	Alkalinity.	Hardness.			Remarks.
					Total.	Permanent.	Temporary.	
124	?	Stoned, iron pump.....	78	123	185	84	101	
65	12	Open well, stoned.....	80	132	263	129	134	
66	15	" "	58	154	246	112	134	
67	15	Stone, wood pump	60	182	238	67	171	
68	16	Stone, iron pump.	16	160	179	28	151	
69	?	Stoned, iron pump, in shed..	248	137	358	210	148	Of doubtful character.
70	?	Stoned, iron pump	178	148	280	168	112	" "
71	?	" "	98	92	252	151	101	
72	15	Open well, stone, cement platform.....	42	115	179	67	112	
73	16	Iron pump, stoned	40	115	146	28	118	
81	30	" "	64	199	286	112	174	
84	13	" "	242	266	498	263	235	Should be further examined.
85	15	Open well, stoned.	12	165	168	11	157	
121	13	" "	56	129	196	73	123	
90	15	Iron pump, stoned	50	165	224	50	174	
111	?	Stoned, Iron pump.....	34	126	157	28	129	
115	?	" "	164	132	286	151	135	" "

NOTE.—Judging by the number of wells in Oakville which shew less than 50 parts of chlorine, there is no apparent reason why any of these wells should contain more than this. The higher numbers are easily explained on the assumption that the gathering ground (the surface soil of the town) is more or less saturated with animal waste. It should be easy to demonstrate the correctness or otherwise of this suspicion.

APPENDIX.

I have been asked to describe apparatus, solutions, etc., needed to carry out the method of testing for Chlorine.

The following are needed :

Apparatus.

1 Burrette, 50 cc. graduated in 1-10	$2.00
1 " stand	1.00
1 glass funnel (2 inch.)	0.10
1 " stirrer	0.05
2 porcelain dishes (4 inch. diam.)	0.60

(White saucers will do.)

1 10 cc. pipette	0.20
1 50 cc. graduate flask	0.20
	$4.15

Reagents.

1. Distilled water.

2. Solution of Nitrate of silver, 4.7887 grammes of the crystals to 1 litre.

Each 1 cc. of this solution corresponds to 1 milligramme of Chlorine, (in chlorides.)

3. Chromate of Potash, a 5 per cent. solution.

4. Solution of Sodium Chloride, 1.648 grammes per litre.

Each 1 cc. contains 1 milligramme of Chlorine.

The method of working is so simple that it may easily be learnt by any one having an elementary knowledge of chemistry, in a few hours. It is fully described in Sutton's Volumetric Analysis, (published by J. and A. Churchill, London) and in other similar works. Best, however, by personal instruction.

Exceptional samples of water may require preliminary treatment ; but these are so rarely met as to be negligible, or they may be sent to properly qualified analysts for an opinion.

APPENDIX P.

BULLETIN No. 150—CANNED SALMON

OTTAWA, March 31, 1908.

W. J. GERALD, Esq.,
Deputy Minister of Inland Revenue.

SIR,—I beg to submit herewith a report upon the examination of ninety samples of canned salmon, collected in February of this year.

The collection consists of six (6) samples taken in each inspectoral district of the Dominion.

Details as to vendor and packer will be found in the accompanying tables.

All samples were found to be in good condition, and true to name.

I beg to recommend the publication of this report as Bulletin No 150.

I have the honour to be, Sir,
Your obedient servant,

A. McGILL,
Chief Analyst.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Remarks and Opinion of the Chief Analyst.
1908.			DISTRICT OF NOVA SCOTIA—R. J. WAUGH, INSPECTOR.					
Feb. 18..	Canned Salmon.....	33618	Forristall & Co., Halifax, N.S.	3 tins.	45	B. C. Packers Association, Vancouver, B.C.	Sold as Eagle Brand.....	Good.
" 18..	"	33619	T. J. Brown, Halifax, N.S...	3 "	45	West Coast Packing Co., Newfoundland.	Labeled Solid Red Brand Newfoundland Salmon.	"
" 18..	"	33620	C. E. Choat & Co., Halifax. N.S.	3 "	30	B. C. Packers Association, Vancouver, B.C.	Sold as Nansen Brand	"
" 18..	" ...	33621	G. A. Cook & Co., Halifax, N.S.	3 "	45	B. C. Canning Co., Victoria, B.C.	Sold as Mounted Police Brand.. ...	"
" 22..	"	33622	Hogg Creig & Co., Pictou, N.S.	3 "	54	Capital City Canning and Packing Co., Victoria, B.C.	Sold as Icicle Brand.....	"
" 25..	"	33623	B. H. Dodge & Co., Kentville, N.S.	3 "	30	Pacific Coast Packing Co., Vancouver, B.C.	Sold as Emblem Brand.	"
			DISTRICT OF PRINCE EDWARD ISLAND—T. MOORE, INSPECTOR.					
Feb. 17..	Canned Salmon.....	31230	Sanderson & Co., Charlottetown.	3 cans.	54	British Columbia Packing Ass., Vancouver, B.C.	Peacock Brand, Skeena River Salmon.	Good.
" 17..	"	31231	Geo. Rackham, Charlottetown.	3 "	54	" "	◇C◇ Brand British Columbia Keena Fresh River Salmon, Skeena Packng Co.	"
" 18..	"	31232	R. T. Holman, Ltd., Summerside.	3 "	39	Anglo-British Columbia Packing Co., Ltd., Vancouver, B.C.	Tulip Brand Fresh B.C. Pink Salmon.	"
" 18..	"	31233	Brace & McKay, Summerside.	3 "	48	Columbia Packing Co., J. H. Todd & Sons, Agents, Vancouver, B.C.	Columbia Brand Fresh Salmon.....	"
" 18..	"	31234	A. Bowness, Kensington....	3 "	54	W. A. Anderson, Vancouver, B.C.	Otter Brand Choice B. C. Red Spring Salmon.	"
" 8..	"	31235	D. McKenzie, Kensington...	3 "	54	Anglo-British Columbia Packing Co., Ltd., Vancouver, B.C.	Red Clover Brand Red Salmon, Spring Packed.	"

DISTRICT OF NEW BRUNSWICK—J. C. FERGUSON, INSPECTOR.

Feb.	14..	Canned Salmon.....	29661	Baird & Peters, Ward St., St. John, N.B.	3 tins.	42	Anglo-British Packing Co., Vancouver, B.C.	Red Clover Brand.....	Good.
"	20..	"	29662	Sussex Mercantile Co. Ltd., Sussex, N.B.	3 "	50	British Columbia Packers Assn. Vancouver, B.C.	Labeled Red Salmon, Red Poppy Brand Salmon, packed by B. C. P. Assn. Vancouver, B.C.	"
"	21..	"	29663	W. G. Bell, Main, St., Moncton, N.B.	3 "	45	Packed for Baird & Peters, St. John, N.B.	Labeled Best Skeena River Salmon Red brand Choice Cutlet Salmon.	"
"	24..	"	29664	A. & R. Loggie, Main St., Dalhousie, N.B.	3 "	45	Federation CanningCo.,Ltd., Victoria, B.C.	Labeled B. C. Salmon Morningtide Salmon, Federation Brand Salmon Canning Co., Ltd., Trade Mark hands clasped.	"
"	24..	"	29665	John M. McLeod, Main St., Dalhousie, N.B.	3 "	51	Whitehead & Turner, Quebec City, P.Q.	Labeled Fraser River Rock Eye Salmon, Clover Leaf Salmon, packed at Lulu Island, B.C., Pacific Selling Co., New York.	"
"	25..	"	29666	John Dalton, Pleasant St., Newcastle, N.B.	3 "	45	British Columbia Packers Assn., Vancouver, B.C.	Labeled Snowshoe Brand Choice Salmon, Fresh Salmon Registered, packed by the British Columbia Packers, Vancouver, B.C.	"

DISTRICT OF QUEBEC—E. BELAND, INSPECTOR.

Feb.	10..	Salmon, Clover Leaf.	26380	T. R. Lesperance, Montmagny.	3 boxes.	60	Whitehead & Turner, Quebec	....	Good.
"	10..	" Stadacona. .	26381	" "	3 " .	45	" "	....	"
"	10..	" British.	26382	Paquette & Cie, Montmagny.	3 " .	45	Turcotte & Frère & Cie, Quebec.	....	"
"	10..	" Carnation ..	26383	Alphonse Boutin, Montmagny.	3 " .	36	Honoré Blouin, Quebec.....	....	"
"	10..	" Eagle Brand	26384	" "	3 " .	45	" "	....	"
"	10..	" Lily Brand.	26385	Alexander Fournier, Montmagny.	3 " .	45	Langlois & Paradis, Quebec .	....	"

DISTRICT OF ST. HYACINTHE—J. C. ROULEAU, INSPECTOR.

Feb.	13..	Canned Salmon.....	27962	D. Hébert, Drummondville..	3 boxes.	30	Vancouver Packing Co., Vancouver, B.C.	Other brand, Saumon Frais, 1 lb.....	Good.
"	13..	"	27963	Guertin & Archambault, Actonville.	3 " .	36	J. H. Todd & Sons, Agents, Victoria, B.C.	Fresh British Columbia Salmon. Sunflour Brand.	"
"	18..	"	27964	May & Houlahan, Sherbrooke	3 " .	45	The British Columbia Packers Assn., Vancouver, B.C.	Eagle Brand.....	"

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Remarks and opinion of the Chief Analyst.
1908.			DISTRICT OF ST. HYACINTHE—J. C. ROULEAU, INSPECTOR—*Continued.*					
Feb. 19..	Canned Salmon.....	27965	S. Bachand & Fils, Coaticook.	3 boxes.	36	Excelsior Packing Co., Ladners Landing, B.C.	Excelsior Brand.....	Good.
" 20..	"	27966	Louis Roberge, Thetford Mines.	3 " .	54	The British Columbia Packers Assn., Vancouver, B.C.	Red Poppy Brand, Red Salmon Choice Pack.	"
" 21..	"	27967	R. O. Brodeur, St. Hyacinthe	3 " .	54	Anglo-British Columbia Packing Co., Ltd., London and British Columbia.	Lynx Brand.....	"
			DISTRICT OF MONTREAL—J. J. COSTIGAN, INSPECTOR.					
Feb. 10..	Canned Salmon.....	32589	O. Decari, 1617 Notre Dame E., Montreal.	3 cans..	30	Vance Cannery. Robert Draney.	Labeled British Columbia Salmon, packed at Cannery by Robt. Draney. Trade mark, P.P.P. in circle with wording, Packer of Prime Pinks.	Good.
" 10..	"	32590	" "	3 " ..	45	Skeena Packing Co.	Labeled British Columbia Salmon, Skeena Packing Co. Trade mark, C in diamond.	"
" 11..	"	32591	M. Cherrin, 873 St. Lawrence B., Montreal.	3 " ..	54	Richmond Canning Co., J. H. Todd & Sons owners, Victoria, B.C.	Horse Shoe Brand. Richmond Canning Co., J. H. Todd & Sons owners, Victoria, B.C.	"
" 11..	"	32592	" "	3 " ..	45	Evans, Coleman & Evans, Vancouver, B.C.	Autumn Leaf Brand, Evans, Coleman & Evans, Vancouver, B.C.	"
" 11..	"	32593	G. Pilon, 25 Ontario East, Montreal.	3 " ..	30	The British Columbia Packers Assn., Vancouver, B.C.	Dominion Brand British Columbia salmon, packed by the British Columbia Packers Assn., Vancouver, B.C.	"
" 11..	"	32594	" "	3 " ..	36	Anglo-British Columbia Packing Co., Ltd., Vancouver, B.C.	Tulip Brand, British Columbia, Salmon Pink, packed by the Anglo British Columbia Packing Co., Ltd., Vancouver, B.C.	"

Feb.	12..	Canned Salmon.	34138	C. B. McLean, Ottawa.....	3	tins	45	Major & Co., Ottawa.....	Labeled B. C. Salmon, Evans, Coleman & Evans, Vancouver, B.C. Autumn Leaf Brand.	Good.
"	13..	"	34139	Forde Bros., Bank St., Ottawa.	3	"	45	Anglo British Columbia Packing Co., Ltd., London and B.C.	Labeled Corn Flower Brand Fresh Salmon, with words Bachelor's Button, packed by the Anglo B.C. Packing Co., London and B.C.	"
"	13..	"	34140	Wall & Co., Ottawa.....	3	"	50	J. H. Todd & Sons, agents, Victoria, B.C.	Tins labeled Tiger Brand Salmon, Tiger Brand registered trade mark.	"
"	15..	"	34141	F. A. Scott & Sons, Bank St., Ottawa.	3	"	60	H. N. Bate & Sons, Ottawa .	Labeled Fraser River Sock Eye, packed at Lulu Island, B. C., Clover Leaf Salmon Pacific Selling Co., N.Y.	"
"	18..	"	34142	W. L. Belton & Co., Almonte	3	"	50	F. J. Castle & Co., Ottawa..	Victoria Cross Brand, only choicest Red Sock Eye Salmon, Vancouver Packing Co., Vancouver, B.C.	"
"	19..	"	34143	W. J. Creighton, Kemptville	3	"	60	Not known...	Shamrock Brand Salmon, Red Sock Eye, Evans, Coleman & Evans, Vancouver, B.C., sale agents. Guaranteed the finest Red Sock Eye Salmon.	"

DISTRICT OF KINGSTON—J. HOGAN, INSPECTOR.

Feb.	11..	Canned Salmon.	33084	J. Kelly, Princess St., Kingston.	3	tins	60	Lulu Island, B.C.....	.....	Good.
"	12..	"	33085	A. Fount, Walton St., Port Hope.	3	"	54	B. C. Pack. Assoc....	.....	"
"	13..	"	33086	W. J. Routly, Charlotte St., Peterboro.	3	"	45	Corby, New York.....	Target Brand	"
"	13..	"	33087	" " ..	3	"	54	"	....	"
"	13..	"	33088	W. H. Hamilton, Simcoe St., Peterboro.	3	"	54	....	Clover Leaf Brand.	"
"	13..	" .. .	33089	J. Bell, Hunter St., Peterboro	3	"	54	....	Sailor Boy Brand	"

DISTRICT OF TORONTO—H. J. DAGER, INSPECTOR.

Feb.	24..	Canned Salmon.	35044	H. P. Boyd, Hamilton	3	cans	54	British Columbia Packers Assoc., Vancouver, B.C.	Clover Leaf Brand.....	Good.
"	27..	"	35045	E. Gander, St. Catherines...	3	"	54	" " ..	Maple Leaf Brand	"
"	28..	"	35046	W. H. Martin, Niagara Falls South.	3	"	45	" ..	Golden Net Brand	"

CANNED SALMON.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Remarks and Opinion of the Chief Analyst.
1908.			DISTRICT OF TORONTO—H. J. DAGER, INSPECTOR—*Continued.*					
Feb. 29..	Canned Salmon.....	35047	J. H. Marshall, Niagara Falls	3 cans	45	British Columbia Packers Assoc., Vancouver, B.C.	Labeled Mermaid Brand, Lucas steel and Bristol.	Good.
Mar. 3..	"	35048	J. Gray & Co., Toronto.....	3 "	45	" " ..	Labeled B. C. Salmon, Arbutus Brand	"
" 3..	"	35049	John Hickman, Toronto....	3 "	54	Clayoquote Sound Canning Co., Ltd.	Labeled B. C. Salmon, Ocean Brand.	
			DISTRICT OF LONDON—T. KIDD, INSPECTOR.					
Feb. 11..	Canned Salmon.....	30463	J. J. McEwen, grocer merchant.	3 cans..	30	Elliot Mar & Co., London, Ont.	....	Good.
" 11..	"	30465	P. J. Dean, Goderich.....	3 " ..	45	" " ..	....	"
" 13..	"	30468	M. H. Kelloran, Stratford...	3 " ..	38	Anglo British American Co., Vancouver, B.C.	Branded Pink Salmon.....	"
" 13..	"	30469	Barnsdale Trading Co. Triangle Brand Trading Co.	3 " ..	45	Windsor Canning Co., (Geo. Watts & Co.), Brantford.	Marked Skeena River Salmon.....	"
" 21..	"	30476	Harris Wiltsie, Clinton, Ont.	3 " ..	45	Edward Adams & Co., London.	B.C. Packing Co.....	"
" 25..	"	30479	J. D. Smith & Co., St. Mary's	3 " ..	38	Elliot Mar & Co., London, Ont.	Cascald Brand.....	"
			DISTRICT OF WINDSOR—J. TALBOT, INSPECTOR.					
Feb. 18..	Canned Salmon.....	34506	W. J. Cherney.....	3 tins...	54	A. M. Smith & Co., London.	....	Good.
" 18..	"	34507	"	3 " ...	30	Pacific Coast Packing Co....	....	
" 18..	"	34508	Frank Hutton....	3 " ...	38	British Columbia Packing Association.	....	

"	20..	"	.....	34514	R. A. Ross, London	3	" ...	30	B.C. Packers Ass., Vancouver.	.... "
"	20..	"	.....	34515	R. J. Wood, London.....	3	" ...	45	Evans Coleman & Evans, Vancouver.	.... "
"	20..	"	.....	34516	Cullis & Fleming, London...	3	" ...	60	B.C. Packers Ass., Vancouver.	.... "

DISTICT OF MANITOBA—A. C. LARIVIERE, INSPECTOR.

Feb.	20..	Canned Salmon.....	25882	Percival McKnight, Killarney, Man.	3	tins..	45	Jobin Marrin & Co., Winnipeg, Man.	Tiger Brand.....	Good.
"	20..	"	25883	" " ..	3	" ...	50	Federation Brand Salmon Cannery Co., Ltd., Victoria, B.C.	Federation Brand	"
"	20..	"	25884	" " ..	3	" ...	50	Pacific Selling Co., N.Y. ...	Packed at Princess Royal Island, B.C., Arrow Brand.	"
"	24..	"	25885	Cairns Naylor Co., Glenboro, Man.	3	" ...	60	Campbell Bros., Wilson, Winnipeg, Man.	Royal Shield Brand, Packed expressly for Campbell Bros. Wilson, vendor, said, he did not think the article was pure.	"
"	24..	"	25886	" " ..	3	" ...	55	R. Draney, Namee Cannery, B.C., Fitzhugh Sound.	King Edward Brand.....	"
"	24..	"	25887	" " ..	3	" ...	45	J. H. Todd & Sons., Victoria, B.C.	Royal Crown Brand.....	"

DISTRICT OF CALGARY—R. W. FLETCHER, INSPECTOR.

Feb.	28..	Canned Salmon.....	28913	H. W. Keland, Medicine Hat	3	cans..	60	Anglo British Columbia Packing Co., Ltd., B.C.....	.....	Good.
"	29..	"	28914	The Bently Co., Lethbridge..	3	" ..	60	W. H. Malkin Co., Vancouver, B.C.	....	"
March	2..	"	28915	T. Lebel & Co., Pincher Creek	3	" ..	40	Caledonia Packing Co., Fraser River, B.C.	.. ..	"
"	5..	"	28916	R. MacKenzie & Co., Edmonton.	3	" ..	45	J. H. Todd & Son, Victoria, B.C.	.. ..	"
"	5..	"	28917	Hudson Bay Co., Edmonton.	3	" ..	50	British Columbia Packers Assn., Vancouver, B.C.	.....	"
"	5..	"	28918	The Acme Co., Edmonton...	3	" ..	50	W. H. Malkin Co., Vancouver, B.C.	....	"

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost. Quantity.	Cost. Cents.	Name and Address of Manufacturer or Furnisher as given by Vendor.	Inspector's Report.	Remarks and Opinion of the Chief Analyst.
DISTRICT OF VANCOUVER—J. F. POWER, INSPECTOR.								
Feb. 18..	Salmon	34232	Webster Bro., Vancouver, B.C	3 lbs....	40	Wallace Bros., Claxton, B.C.	.....	Good.
" 18..	"	34233	W.H. Walsh, Vancouver, B.C.	3 " ..	30	Nawichy Canning Co.... ...	Heron Brand.....	"
" 18..	"	34234	S. T. McCready, Vancouver, B.C.	3 " ..	45	B.C. Packers Association. ..	Red Poppy Brand..... ...	"
" 18..	"	34235	Dominion Grocery Co., Vancouver, B.C.	3 " ..	40	Evans Coleman & Evans	Carnation Brand..	"
" 18..	"	34236	W. H. Moore, Vancouver, B.C.	3 " ..	40	Vancouver Packing Co	Victoria Brand.....	"
" 18..	"	34237	H. Albert, Vancouver, B.C..	3 " ..	40	Federation Canning Co., Victoria, B.C.	Unity Brand.....	"
DISTRICT OF VICTORIA—D. D. SULLIVAN, INSPECTOR.								
Feb. 20..	Canned Salmon.....	34852	Saunders Grocery Co., Ltd., Victoria, B.C.	3 tins...	50	British Columbia Packers Assn., Vancouver, B.C.	....	Good.
" 20..	"	34853	" " ..	3 " ...	45	Ward Anderson & Co., Victoria & Vancouver, B.C.	....	"
" 20..	"	34854	" " ..	3 " ...	50	J. H. Todd & Sons, Victoria, B.C.	....	"
" 21..	"	34855	West End Grocery Co., Ltd., Victoria, B.C.	3 " ...	40	Nuwichy Canning Co. of B.C.	....	"
" 21..	"	34856	Fred Carne, Victoria, B.C..	3 " ...	50	Wilson Bros., Victoria, B.C.	....	"
" 22..	"	34857	Dixi H. Ross & Co., Ltd., Victoria, B.C.	3 " ...	50	W. H. Malkin & Co., Vancouver, B.C.	... .	"

REPORT

OF THE

MINISTER OF AGRICULTURE

FOR THE

DOMINION OF CANADA

FOR THE

YEAR ENDED MARCH 31

1908

PRINTED BY ORDER OF PARLIAMENT

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1908

No. 15—1909.]

TABLE OF CONTENTS

PAGE.

MINISTER'S REPORT:—

I. General remarks 5

II. Arts and Agriculture 9

Dairy and Cold Storage Commissioner's Branch 9
Extension of Markets division 13
Cold Storage division 15
Fruit division 16

Seed Commissioner's Branch 18

The Live Stock Branch 25

Experimental Farms Branch 27
Agricultural and Live Stock division 29
Horticultural division 30
Chemistry division 32
Entomological and Botanical division 34
Cereal division 35
Poultry division 37
Branch Farms 38

General crops 41

Health of Animals Branch 42

Archives Branch 46

III. Patents of Invention 58

IV. Copyrights, Trade Marks, Industrial Designs and Timber Marks 61

V. Public Health and Quarantine 62

VI. Census and Statistics 63

Appendices (see detailed index at back of report).
Reports of Quarantine Officers (1 to 14).

Miscellaneous;—
Regulations under 'The Cold Storage Act' (15) 108
Regulations relating to Mange (16) 111
Canadian Quarantine Regulations (17) 114
Regulations governing the inspection of Meats (18) 130
Rules and Forms under Trade Mark and Designs Act and Timber Marking Act (19) 139
Rules and Forms under 'The Copyright Act' (20) 142
Report on Irish International Exhibition (21) 147
Report on New Zealand International Exhibition (22) 149
Report by Tobacco Expert (23) 154

REPORT

OF THE

MINISTER OF AGRICULTURE

1907-8

To His Excellency the Right Honourable Sir Albert Henry George, Earl Grey, Viscount Howick, Baron Grey of Howick, in the County of Northumberland, in the Peerage of the United Kingdom, and a Baronet; Knight Grand Cross of the Most Distinguished Order of Saint Michael and Saint George, &c., &c., Governor General of Canada.

May it Please Your Excellency:

I have the honour to submit to Your Excellency a report of the Department of Agriculture for the fiscal year ended March 31, 1908.

I.—GENERAL REMARKS.

A synopsis of the work of the department and of the operations of the various branches comprised therein is laid before Your Excellency. The work in each has been efficiently carried out.

Legislation affecting the department during the fourth session of the Tenth Parliament, to the 31st of March, 1908, consisted of;—

Chapter — 7 Edward VII., intituled 'An Act to amend the Copyrights Act.'

The following communication from the Board of Agriculture and Fisheries, with its enclosure, being an extract from 'The Times' of July 2, 1907, relating to the embargo on Canadian cattle, was received under cover of a despatch addressed to Your Excellency, signed by the Right Honourable the Secretary of State for the Colonies, dated July 25, 1907.

Board of Agriculture and Fisheries,
4 Whitehall Place, London, S.W., July 8, 1907.

Sir,—I am directed by the President of the Board of Agriculture and Fisheries to advert to Mr. Lucas's letter of the 8th ultimo No. 16467-1907, referring the board to the remarks made at the recent Colonial Conference by the Prime Minister of Canada as to the law regarding the importation of live cattle into Great Britain, and asking for a full expression of the views of the board on the matter for communication to the

Dominion Government, and in reply I am to ask you to be so good as to submit the following observations to the Secretary of State.

1. Experience has shown that the existing statutory requirement that all cattle imported into this country shall be slaughtered in wharfs provided for the purpose at the port of landing is no obstacle to the development and maintenance of a large and valuable trade. In the case of Argentina, the number of cattle imported into Great Britain steadily rose from 4,200 in 1891 to 85,000 in 1899, when the trade was interrupted by the discovery of foot and mouth disease in that country. The value of the imports in question was £68,000 in 1891, and £1,392,000 in 1899. During the whole of that period the requirement of slaughter was in force. The case of the United States shows similar results. The number of cattle imported thence into Great Britain in 1879 was 76,000, with a value of £1,782,000. In 1906 the number imported was 399,000 with a value of £6,937,000. Slaughter at the port of landing was required for the first time in 1879 in respect of cattle brought from that country, and has been enforced ever since. The board are glad to observe that similar results are indicated in the case of Canada, the imports from which during the past four years have been as follows:—

	No. of cattle imported.	Declared value.
1903	190,812	£3,315,762
1904	146,598	2,547,451
1905	148,714	2,491,144
1906	160,688	2,765,437

In the case of Canada, the highest figure recorded prior to 1892, when slaughter at the port of landing was first required, was reached in 1890. The imports in that year were 120,469 with a declared value of £1,892,298.

2. The existing law does not cast any stigma or discredit upon Canadian cattle, for it holds good not only in the case of the United States and other foreign countries, but also in that of every British colony, including both Australia and New Zealand, whence live stock have in the past been imported into Great Britain. It is in fact a sanitary law of universal application of great importance to stockowners at home as a valuable safeguard against the introduction of disease, but not at all inconsistent with the transaction of a large and growing trade, as has been shown above. Moreover foreign and colonial buyers of farm stock for export from Great Britain rely upon the freedom of this country from imported diseases which is maintained by the Diseases of Animals Acts, and an extract from 'The Times' of the 2nd instant, is sent herewith as a recent illustration of their attitude in the matter.

3. The experience of Argentine in 1900, and more recently of the United States in 1902 has shown how suddenly and unexpectedly Foot and Mouth diseases may make its appearance in a country, quite irrespective of the maintenance of an efficient veterinary organization. In the former case diseased animals were actually imported into this country, and it was only by dint of good fortune and the most strenuous exertions that the infection was kept within the limits of the Foreign Animals wharfs. A similar result might well have happened in 1902 in the case of the United States, notwithstanding the ability and the energy of the Department of Agriculture in that country.

4. The enormous losses which British agriculturists have suffered during the last thirty years, mainly by reason of the increased pressure of colonial and foreign competition, make it more than ever necessary that every possible precaution should be taken against the introduction of diseases, consistent with the reasonable requirements of colonial producers and the interests of consumers at home. The consequence of the recurrence in Great Britain of epidemics of disease, such as have been experienced in the past, would be disastrous, and consumers as well as producers would be affected throughout the country. It is, therefore, in the general interest that no risk should be taken which can be avoided by the maintenance of a law which provides a considerable measure of security against the introduction of disease, and which at the same time does so without any serious interference with trade, and without rendering it necessary

for any action of an invidious character to be taken in regard to the cattle imported from a particular colony or country.

The Dominion Government will probably have gathered from recent public utterances of members of His Majesty's Government both in parliament and elsewhere that there is no prospect of their being able to propose any reversal of the policy of their predecessors in this matter. In this connection I am to refer to the debate which took place in the House of Lords on April 5, and May 21, 1906; to the discussion in the House of Commons on April 6 in that year on the motion for the second reading of the Disease of Animals Act (1906) Amendment Bill; and also to the answer given in the House of Commons by Sir Henry Campbell-Bannerman on May 28 last to a question put by Mr. Mond on the subject of Sir Wilfrid Laurier's remarks at the Colonial Conference.

Earl Carrington therefore suggests that the Dominion Government might be informed that His Majesty's Government regret that after the fullest consideration and for the reasons above indicated, they are unable to propose to parliament any amendment of the existing law on the subject.

I am, &c.,

(Sgd.) A. W. ANSTRUTHER,
Assistant Secretary.

Extract from 'Times,' July 2, 1907.

The magnificent display of pedigree live stock at Lincoln last week testified in no uncertain degree to the vital importance of stock breeding to the farming industry in this country. In quality as well as in extent the show was admitted by the numerous visitors who were present from foreign countries and the colonies, to stand out above anything they have ever seen outside the United Kingdom. Nor were their assurances meant merely as agreeable compliments, for their very presence—most of them were in quest for animals of one or other of the numerous breeds—was practical proof of the sincerity of their utterances. The important point to lay to heart in connection with this great question is the necessity of firmly rejecting any alteration in the conditions under which the existing state of prosperity and success has been attained. It is significant of the far-reaching importance of the subject that foreign and colonial buyers are even more emphatic in their advocacy of a policy of protection against invading diseases than are the home stockowners. One after another of the representatives from abroad at the Lincoln show vigorously asserted that it was only by maintaining absolute freedom from devastating diseases that this country would continue to attract their custom. Many of them suffer just as Canada does from the operation of the existing laws concerning the importation of live animals, but they recognize that they derive tangible compensation in being able to come to the United Kingdom for pure bred stock with the knowledge that they incur no risk of introducing disease by so doing. At the International Conference of Sheep Breeders on the Monday an idea could be gathered of the dread which foreign and colonial buyers entertain of introdueing disease with purchased animals. Several speakers referred in uncomplimentary terms to the continued existence of sheep scab in this country, and in reply to the suggestion that the quarantine regulations imposed by Australia and other countries were needlessly irksome, emphatically asserted that after the trouble and expense that had been incurred in eradicating the disease in their respeetive countries, they could not recommend any concession until the United Kingdom had completely suppressed the scourge. Of their action in this matter we cannot fairly complain, as it is exactly parallel to our own policy respecting foreign disease. Our costly experienees with foot-and-mouth disease, pleuro-pneumonia, rinderpest and other maladies would be valueless, if we were not to be as careful to avoid the possibility of their reintroduction as Australia is concerning sheep scab.

By an order in council of March 20, 1907, authority was granted to Canada to adhere to the International Agricultural Institute to be established in Italy.

By an order in council of April 17, 1907, there was established an Historical Manuscripts Commission for Canada with a view to place on a sounder and broader basis the historical work done by the Dominion Government.

By an order in council of May 1, 1907, in virtue of the provisions of chap. 75 of the Revised Statues of Canada, 1906, it was ordered that section 68 of the Regulations relating to Animals Quarantine and Health of Animals established by an order in council of January 14, 1907, should not apply to the ports of Margaree and Cheticamp in the province of Nova Scotia.

By an order in council of May 3, 1907, in virtue of the provisions of the Cold Storage Act of 1907, Your Excellency was pleased to approve of the regulations made in pursuance of the provisions of that Act. (See Appendix 15).

By an order in council of May 6, 1907, the resignation of Mr. Newton Wolverton, B.A., superintendent of the Experimental Farm at Brandon, Manitoba, was accepted, to take effect from June 1, 1907.

By an order in council of May 6, 1907, Mr. James Murray, B.S.A., of Regina, Saskatchewan, was appointed superintendent of the Experimental Farm at Brandon, said appointment to date from June 1, 1907.

By an order in council of May 9, 1907, Mr. J. A. Ruddick, the Dairy and Cold Storage Commissioner, was appointed to represent Canada at the third International Congress of Dairying held at The Hague, in the month of September, 1907.

By an order in council of June 10, 1907, in virtue of the provisions of section 28, chap. 75, R.S.C., 1906, the regulations authorized by order in council under date July 23, 1906, for the eradication of the disease of mange in cattle in the provinces of Saskatchewan and Alberta, were rescinded and new regulations substituted therefor. (See Appendix 16).

By an order in council of June 12, 1907, in virtue of the provisions of section 3, chap. 74, R.S.C., 1906, intituled 'An Act respecting Quarantine,' the quarantine regulations established by order in council of August 18, 1898, were rescinded and new regulations substituted therefor. (See Appendix 17).

By an order in council of July 10, 1907, the following amendments were made to the regulations relating to Animals Quarantine, established by Order in Council of January 14, 1907:—

1. Section 3 of said regulations is amended by expunging the word 'Quebec,' and adding the following sentence to said section 3, 'Quebec is also declared to be an animals quarantine station, in so far as importations into Canada by sea are concerned;'

2. Section 52 of the said regulations is rescinded and the following substituted therefor: '52. Animals other than swine may be admitted on inspection at quarantine and inspection ports only for purposes of exhibition or other temporary stay, subject to the usual customs regulations.'

By order in council under date August 21, 1907, in virtue of the provisions of section 20, chapter 27, 6-7 Edward VII., intituled, 'An Act respecting the inspection of meats and canned foods,' Your Excellency was pleased to approve of the regulations made in pursuance of the provisions of that Act, the same to come into force on September 3, 1907. (See Appendix 18).

By order in council of October 25, 1907, it was found necessary, owing to the revision and consolidation of the statutes of Canada, that the rules and forms under the Trade Mark and Design Act and the Timber Marking Act, established by order in council of May 9, 1887, should be amended and new rules and forms substituted therefor. (See Appendix 19).

By order in council of November 25, 1907, Robert C. Ruddick, Esq., M.D., of St. Martins, New Brunswick, was appointed inspecting physician of the St. John, New Brunswick, quarantine station (Partridge island) vice John Edgar March, Esquire, M.D., deceased.

By order in council of December 3, 1907, the rules and forms under the Copyright Act, approved by Your Excellency on April 12, 1887, were rescinded and new rules and forms substituted therefor. (See Appendix 20).

The participation by Canada in the Irish International Exhibition held in Dublin, during the past year (opening on May 11, and closing on November 9, 1907), resulted in a very creditable display of the Dominion's natural products and resources, attracting much attention. A report of this exhibition by the commissioner, Mr. Wm. Hutchison, will be found as an appendix hereto. (See Appendix No. 21).

In my annual report for the fiscal year ended March 31, 1907, reference was made to Canada's participation in the New Zealand International Exhibition held in Christchurch, which was marked with great success. A report of this exhibition by the joint commissioners, Mr. T. H. Race and Mr. W. A. Burns, will be found as an appendix hereto. (See Appendix No. 22).

It is with deep regret that I have to record the death of Dr. John Edgar March, who for many years was inspecting physician at St. John, N.B. He died on April 3, 1907.

I have also to report the death of Mr. David A. Routhier, who died on May 9, 1907. He had been a first-class clerk in the Patents Branch of the department for over forty-five years.

It is most gratifying to learn from the report of Mr. Charlan, the French expert, that the result of his labour in connection with Canadian tobacco is very encouraging, and that the prospects of this industry in Canada are increasing.

Appended is the report submitted by Mr. Charlan for the twelve months ended March 31, 1908. (See Appendix No. 23).

II.—ARTS AND AGRICULTURE.

DAIRY AND COLD STORAGE COMMISSIONER'S BRANCH.

This branch of my department, which is administered by Mr. J. A. Ruddick as Dairy and Cold Storage Commissioner, includes the divisions of dairying, fruit, extension of markets and cold storage. Although there is a separate staff for each division, composed of officers with expert knowledge of the various lines of work, and these have assigned to them certain specific duties, there is, owing to the close relation in the work of the several divisions, much co-operation in carrying on the work as a whole, all of which promotes efficiency and economy.

The branch of the Dairy and Cold Storage Commissioner deals more particularly with the commercial side of the various industries which it touches, and is not equipped or provided with facilities for carrying on experimental work, although special arrangements are made from time to time, as may be required. The publications of the branch are written in popular form, and are not descriptive of experiments or investigations, as a rule.

PUBLICATIONS.

During the year under review the following bulletins of the Dairy and Cold Storage Commissioner's series have been prepared and published:—

No. 15.—Gathered Cream for Buttermaking.

No. 16.—Subsidies for Cold Storage Warehouses.

No. 17.—Buttermaking on the Farm.

No. 18.—Co-operation in the Marketing of Apples.

No. 19.—The Packing of Apples in barrels and boxes.

No. 20.—The use of Ice on the Farm.

No. 21.—Cow Testing Associations.

A report of the District of Huntingdon Dairymen's Association was edited and published.

A map showing the approximate location of all the cheese factories, creameries and combined factories in Canada was prepared and published, with the assistance of Mr. James White, geographer of the Department of the Interior.

A Monthly Fruit Crop Report was compiled from information supplied by a large number of correspondents representing every fruit district in Canada. It was published from May to October, as usual.

A report of the Dairy and Cold Storage Commissioner will be published as an appendix to this report, giving the details of the work of the branch and other information of interest to dairymen, fruit growers and others.

MEETINGS.

The several officers of the branch have attended and given addresses at numerous agricultural, dairy and fruit meetings during the course of the year.

For the sake of clearness, further reference to work of this branch will be made under the heads of the four divisions.

DAIRYING.

The season of 1907 was marked by very dry weather and consequent shortage of feed in some of the most important dairy districts. Quite a large number of dairy cows were disposed of during the early part of the winter, because the owners found it impracticable to supply the necessary feed to carry them through. The high level of prices which prevailed, especially for cheese, during the manufacturing season, and for

butter during the winter months, has been some compensation for the shortage in milk. On the whole, the year has been a fairly satisfactory one for the dairymen.

The relatively high prices paid for cheese during the manufacturing season had the effect of inducing many of the combined factories to make cheese instead of butter. This fact, coupled with the increasing home demand, has resulted in materially reducing the exports of butter; so much so that the record for the season of 1907 is the lowest for many years.

INCREASED HOME CONSUMPTION.

Although the total exports of dairy produce for the year ended March 31, 1908, show a considerable falling off as compared with previous years, if the increased home consumption is taken into account it will be seen that the total production of milk has not shown any decrease. A fair estimate of the increase in the value of the home consumption of butter, cheese and milk for 1907, over that of 1900, places it at $10,000,000. If this amount were added to the value of the exports for 1907, the total would be in excess of any previous record.

OFFICIAL REFEREE OF BUTTER AND CHEESE.

An officer of the Dairying Division was stationed at Montreal during the season of 1907, and acted as Official Referee of Butter and Cheese. During the whole season he was requested to examine only 288 lots of cheese and 40 lots of butter. In view of the comparatively small number of requests received, it is doubtful if I shall be justified in having an officer assigned to this duty in the future.

THE SHIPPING OF GREEN CHEESE.

The practice of shipping green cheese has given rise to very strong protests from the merchants in Great Britain, who point out that the trade will be seriously injured if this sort of thing is continued. The Dairy and Cold Storage Commissioner, who is in close touch with questions of this kind, has lost no opportunity of warning the dairymen and all others concerned against a continuance of a practice which constitutes so serious a menace to the cheese trade.

DAIRY LEGISLATION.

A Bill will be submitted to parliament in which it is proposed to amend the Inspection and Sale Act as follows:—

No person shall

(*a.*) incorporate in a new cheese, during the process of its manufacture, any inferior curd or cheese; or

(*b.*) knowingly sell, expose, or have in his possession for sale without giving due notice thereof, any cheese in which has been incorporated during the process of its manufacture any inferior curd or cheese; or

(*c.*) place in a cheese during the process of its manufacture, or at any time thereafter, any foreign substance of any kind.

COW TESTING ASSOCIATIONS.

The principal active dairy work carried on during the year by the Dairy Division was that which has for its object the improvement of dairy herds and is a continuation of the work of the cow testing associations. During the year 1907 there were 56 cow testing associations in operation, comprising 26 in Quebec, 24 in Ontario, 1 in Prince Edward Island, 2 in Nova Scotia and 3 in British Columbia. In addition to the various associations, a large number of dairymen, who are not in a position to join an association, have taken the matter up on their own account and are now keeping records of their cows. The cheese factories and creameries are being encouraged to undertake the work of testing cows for their patrons, and it is hoped that some progress will be made along this line during the coming season.

THE ASSISTANT DAIRY COMMISSIONER.

The Assistant Dairy Commissioner, Mr. J. C. Chapais, devotes his time and energies largely to the French districts of the province of Quebec, and resides at St. Denis (en bas). Mr. Chapais attends a large number of meetings during the year, giving addresses on dairying, fruit growing and general agricultural topics. He has also assisted in the course of lectures at the St. Hyacinthe Dairy School and visited, in company with the inspectors, a number of the cheese factory and creamery syndicates in the province of Quebec.

DOMINION OF CANADA—EXPORTS OF DAIRY PRODUCE—HOME CONSUMPTION.

CHEESE.

Year ended June 30.	Quantity.	Value.	To Great Britain.	To United States.	To France.	To Germany.	Other Foreign Countries.	B.N.A. Provinces.	British Indies.
	Lbs.	$	$	$	$	$	$	$	$
1868	6,141,570	620,543	548,574	68,784	.....	.....	891	1,594	340
1880	40,368,678	3,893,366	3,772,769	114,507	.....	.....	170	5,710	210
1890	94,260,187	9,372,212	9,349,731	6,425	.....	370	2,154	12,777	755
1891	106,202,140	9,508,800	9,481,373	13,485	.....	.....	1,954	9,104	3,884
1892	118,270,052	11,652,412	11,593,690	39,558	2	.....	2,124	12,942	4,091
1893	133,946,365	13,407,470	13,360,237	23,578	.....	.....	2,689	18,679	2,297
1894	154,977,480	15,488,191	15,439,198	9,552	.....	173	3,036	21,948	14,284
1895	146,004,650	14,253,002	14,220,505	5,058	.....	16	5,463	9,785	12,175
1896	164,689,123	13,956,571	13,924,672	10,359	299	.....	4,861	7,509	8,871
1897	164,220,699	14,676,239	14,645,850	4,486	94	24	5,365	11,954	8,457
1898	196,703,323	17,572,763	17,522,681	14,604	.....	1,428	6,889	12,784	14,377
1899	189,827,839	16,776,765	16,718,418	17,739	.....	.....	11,701	13,293	15,614
1900	185,984,430	19,856,324	19,812,670	4,836	.....	.....	8,774	16,651	13,393
1901	195,926,397	20,696,951	20,609,361	37,601	465	12	15,375	16,603	17,534
1902	200,946,401	19,686,281	19,620,239	12,038	.....	1,179	14,133	20,100	18,602
1903	229,039,925	24,712,943	24,620,004	7,779	.....	170	18,942	21,334	44,714
1904	233,980,716	24,184,566	24,099,004	5,386	44	.....	23,810	21,754	34,568
1905	215,733,259	20,300,500	20,174,211	14,182	700	364	39,696	35,171	36,176
1906	215,834,543	24,433,169	24,300,908	16,082	7,203	.....	52,455	30,992	25,529
Ended March 31.									
*1907	178,141,567	22,006,584	21,909,879	6,900	.....	54	38,337	37,748	13,666
1908	189,710,463	22,887,237	22,763,736	17,732	10	3	42,431	35,792	27,533

* 9 months

BUTTER.

Year ended June 30.	Quantity.	Value.	To Great Britain.	To United States.	To France.	To Germany.	Other Foreign Countries.	B.N.A. Provinces.	British Indies.
	Lbs.	$	$	$	$	$	$	$	$
1868	10,649,733	1,698,042	534,707	1,015,702	.....	1,496	14,870	95,777	26,986
1880	18,535,362	3,058,069	2,756,064	111,158	.....	.....	24,710	163,290	2,647
1890	1,951,585	340,131	184,105	5,059	.....	.....	29,342	119,989	1,636
1891	3,768,101	602,175	440,060	10,054	.....	20,447	24,021	101,649	5,944
1892	5,736,696	1,056,058	877,455	6,038	.....	5,160	27,207	133,770	6,428
1893	7,036,013	1,296,814	1,118,614	7,539	.....	1,175	35,042	127,412	7,032
1894	5,534,621	1,095,588	936,422	6,048	1,125	.....	25,560	109,263	14,170
1895	3,650,258	697,476	536,797	5,365	.....	267	35,028	108,439	11,580
1896	5,889,241	1,052,089	893,053	2,729	.....	9,370	34,299	105,472	7,166
1897	11,453,351	2,089,173	1,912,389	6,233	.....	8,513	33,490	115,754	12,794
1898	11,253,787	2,046,686	1,915,550	3,738	.....	17,574	31,619	51,045	27,160
1899	20,139,195	3,700,873	3,526,007	3,984	.....	12,384	41,810	74,813	41,875
1900	25,259,737	5,122,156	4,947,000	5,044	.....	7,210	43,176	66,069	53,657
1901	16,335,528	3,295,663	3,142,353	5,839	.....	.....	39,675	44,986	62,810
1902	27,855,978	5,660,541	5,459,300	41,149	.....	101	36,109	47,066	71,816
1903	34,128,944	6,954,618	6,554,014	10,225	.....	13	198,381	69,017	112,968
1904	24,568,001	1,724,155	4,400,774	6,497	14	25,644	75,014	88,422	127,790
1905	31,764,303	5,930,379	5,568,999	70,580	14,440	.....	113,650	82,387	80,323
1906	34,031,525	7,075,539	6,802,003	33,965	4,155	.....	100,048	48,283	87,085
Ended March 31.									
*1907	18,078,508	4,011,609	3,805,925	3,539	.....	.....	86,316	56,516	59,313
1908	4,786,954	1,068,703	823,761	38,899	.....	.....	85,741	34,931	85,371

* 9 months.

EXTENSION OF MARKETS DIVISION.

During the past year the inspection work of the Extension of Markets Division, which has for its main object the improvement of existing transportation facilities for the food products which we export, has been carried on by about the same staff as heretofore. Seven inspectors were employed for the full year, and eleven additional inspectors for the period from May 1st to November 30th, distributed as follows:— Seven cargo and three refrigerator car inspectors at Montreal; three travelling refrigerator car inspectors in Ontario and Quebec, and five cargo inspectors at ports in Great Britain.

During the season from May 1 to November 30, this division has carefully looked after the operation of the iced car services for butter, and maintained a close inspection over the loading of all perishable produce shipped from the port of Montreal. The inspectors placed thermographs in the refrigerator chambers and in the ordinary holds of the steamers, in order to secure records of the temperatures maintained in these different compartments during the voyage. In the old country our inspectors attended the discharge of each cargo of Canadian produce, reporting its condition, method and manner of discharge, &c. These inspectors also removed the thermograph charts and forwarded them to the chief of the division at Ottawa where copies were made and sent to the steamship agents, the Board of Trade, Montreal, and to the engineers of the steamers concerned. An exact record was also kept of the temperature of a number of packages of butter in each lot loaded into the steamers at

Montreal and the temperature of the same packages when discharged on the other side.

A cargo inspector was present each time the Empress steamers were loaded at Quebec and one was stationed at Halifax during the winter months to look after the loading of apples and to place thermographs in the steamers carrying fruit. Copies of these records of temperatures were sent to the Secretary of the Nova Scotia Fruit Growers' Association and to the interested steamship agents at Halifax.

Full particulars of the work of the cargo and iced car inspectors will be found in the annual report of the Dairy and Cold Storage Commissioner, published as an appendix to this report.

IMPROVED PORT FACILITIES AT MONTREAL.

Seven of the new freight sheds were in use for the first time last season and they were a great improvement over the old wooden sheds. The new sheds are built on a level with Common and Commissioner streets and are permanent structures of steel and concrete, two stories high. Railway tracks are laid along one side of the sheds so that freight can be removed from the cars to the sheds instead of having to be carted a considerable distance, as was the practice in the past. Seven sheds were finished this spring and seven more are under way. When these are completed stevedores will be able to carry on their work to much better advantage and our inspectors will be in a position to insist upon a still greater degree of care in the handling of perishable goods.

IMPROVED PORT FACILITIES IN GREAT BRITAIN.

When this department first undertook to inspect the condition of our food stuffs when landed at the principal old country ports the facilities there were vastly different to what they are to-day. At London, our butter was delivered to lighters, miles down the river, and our cheese at Tilbury dock from where it was railed to Commercial Road Station, and thence carted to destination. This meant that the cheese was handled five times in thirty-five miles, resulting in great damage to boxes and exposure to heat. Something over two years ago all this was changed and since then our butter and cheese have been discharged at the Surrey Commercial Dock, which is within two miles of Tooley street, the centre of the dairy produce trade in London. At this dock the butter is delivered direct into a cold storage chamber, and the cheese and bacon into cooled air rooms.

Until last season conditions at Liverpool were very unsatisfactory. Our butter was discharged from the steamships into freight sheds on the docks where it remained in some cases for days before it was removed. Since 1903 my department has been endeavouring to have better facilities provided, and last year our efforts bore fruit as the Canadian Pacific Railway Company erected a cold storage warehouse of four chambers, with a total capacity of 60,000 cubic feet on the dock where their steamers are berthed, and in the future, as far as the Canadian Pacific Railway line is concerned, the facilities at Liverpool will be similar to those afforded at the Surrey Commercial Dock, London.

At Avonmouth, the port of Bristol, our butter is handled with good despatch, but at Glasgow I regret to say conditions are not so satisfactory and there is little prospect of any immediate improvement.

COLD STORAGE DIVISION.

The Department of Agriculture has continued the policy of paying a bonus of $100 to the owners of creameries who erect and equip a small ice cold storage, according to plans and specifications supplied by the Dairy and Cold Storage Commissioner, and who fulfil certain conditions in the matter of maintenance. During the year ended March 31, 1908, thirty-nine applications were received for this bonus. Of this number thirteen failed to comply with the necessary conditions of construction or maintenance, leaving only twenty-six to whom the bonus has been paid.

ICED CAR SERVICES.

The various iced car services which have been in operation now for several years, were continued during the season of 1907. Owing to the changes in the butter trade, it was necessary to rearrange the service to some extent, in order to avoid excessive loss on the guarantee basis. The records of temperature as secured by the inspectors of the Markets Division, were lower for 1907 than in any previous year, thus showing that the service is being gradually improved. It has required considerable education on the part of creamery managers, station agents and train men to get the best possible service out of the refrigerator cars. The inspectors employed by this branch, who travel continually with these iced butter cars pointing out defects in the operation of the service and reporting cases of negligence to the proper officials, have been the means of securing much improvement.

Iced cheese cars, on which my department paid icing charges to the extent of $5 per car, were supplied by the railway companies on demand of shippers, to the extent of about 110 cars per week for ten weeks, beginning the second week of July.

The iced fruit car service has not been taken advantage of by the fruit shippers as much as it was expected it would be when it was inaugurated. These cars are supplied in the same manner as the cheese cars are.

OCEAN COLD STORAGE.

It is needless to refer at any length to the cold storage services provided on the steamships sailing from Canadian ports. These services are now so general and so well understood, that further reference would appear to be unnecessary. The Department of Agriculture has not paid any subsidies or bonuses for cold storage on steamships for several years past, There were 47 steamships sailing from the ports of Montreal and Quebec for British ports during the season of 1907, which were equipped with cold storage compartments.

The department continues to supervise the loading and stowing of perishable products and thermographs (recording thermometers) are placed in the various chambers with butter, cheese, meats, fruits, etc. Three hundred and eight of these records were secured during the year.

As a consequence of the large shrinkage in our exports of butter, the cold storage accommodation in steamers sailing from Montreal last season was not used to anything like its capacity, but a splendid service was nevertheless maintained by the different steamship companies. Generally speaking, the butter was delivered to the steamers at Montreal at a lower temperature than in previous years, and was discharged at the ports of London, Bristol, Glasgow and Manchester at a lower temperature than formerly.

Fewer pears were exported in 1907 than in 1906, but those shipped in cold storage were landed in excellent condition. One or two shipments of Keiffer pears were forwarded in ordinary storage, but were found to be over-ripe when discharged on the other side and inclined to slight waste.

SUBSIDIES FOR COLD STORAGE WAREHOUSES.

Applications were received from several companies and firms for the subsidy which is payable under the terms of the Cold Storage Act. Only two of these applications, so far, have been approved of, namely, that of the New Brunswick Cold Storage Company, St. John, N.B., and Scott, Ashton & Co., Morrisburg, Ont. Other applications are under consideration. The New Brunswick Cold Storage Company's warehouse has been completed and the first instalment of the subsidy has been paid. My officers inform me that this is a first-class warehouse of approved 'slow burning' construction and well equipped with modern machinery. It is expected that a large business will be done in handling fish, cheese and apples. The promoters expect to have apples shipped from the Ontario orchards to St. John, before the cold weather begins, to avoid the risk and loss occasioned by the freezing of apples when shipped to Great Britain via St. John, during the winter months.

FRUIT DIVISION.

INSPECTION AND SALE ACT.

The Fruit Division has been engaged largely with the enforcement of the Inspection and Sale Act as far as it is related to fruit and fruit packages.

The greater number of inspections are made at the points of Montreal, Halifax and St. John. A large number of inspections is made also at Winnipeg, Manitoba. This is rendered possible from the fact that Winnipeg is an important distributing point for the Northwest provinces.

INSPECTIONS.

Below are given statistics of inspection for the past seven years:—

——	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.	1907-8.
No. of lots inspected	1,468	1,470	1,964	1,641	2,813	2,440	7,352
No. of packages in lots inspected..	65,880	154,220	234,343	212,348	330,681	330,866	981,632
No. of packages inspected ..	3,155	8,341	10,702	8,798	11,423	13,406	43,243

The following table gives the statistics of convictions since the inception of the Act:—

CONVICTIONS.

—	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.	1907-8.
Ontario	9	15	23	6	22	22	155
Quebec	1	1	1	.....	6	.....	2
Nova Scotia	2	6	10	3	16	14	21
New Brunswick	....	.....	5	. .....	1	.....	....
Manitoba	..... .	14	2	2	1	1	....
British Columbia	.....	....	2	1	4	3	.....
	12	36	43	12	50	40	178

Notwithstanding the crop reports issued by the Fruit Division, apple buyers for the season 1907 underestimated the quantity of apples and offered prices early in the season beyond what the markets would warrant. The result was that a large quantity of inferior fruit was stored and shipped that would have been utilized in other ways had the prices been lower during the picking season. The attempt to realize the price which was paid for the fruit by grading it higher than it deserved, accounts, for the most part, for the large increase in the number of prosecutions made this year.

FRUIT PACKAGES.

There was no serious violation of Part IX. of the Inspection and Sale Act referring to fruit packages. The trade in early fruit and the convenience of importing fruit packages from the United States when there is a shortage in Canada, complicates the enforcement of the Act slightly; notwithstanding, very few packages appeared upon the market improperly marked.

FRUIT CROP REPORTS.

The Fruit Crop Reports were published regularly at the end of each month during the fruit season. The facts collected proved of very great advantage to the grower as well as to the trade generally.

Buyers from Great Britain and the United States, influenced by the reported shortage of apples in the apple producing districts of other countries and particularly of United States, came to Canada and offered prices for winter fruit that would only have been justified by a failure in the crop in Canada. The latest crop report of the Fruit Division indicated a crop of winter apples slightly above the average. This information was verified at the picking season.

FRUIT MEETINGS AND DEMONSTRATIONS IN PACKING.

Sixty-seven meetings were attended by members of the Fruit Division staff. In addition to these meetings some of the inspectors were engaged during the growing months in giving individual instruction in the orchards.

Short courses in horticulture were held at Truro Agricultural College, Macdonald College, St. Anne de Bellevue, and at the Ontario Agricultural College, Guelph. Members of the staff gave instruction in packing and marketing fruit at each of these colleges.

SEED COMMISSIONER'S BRANCH.

The work of the Seed Branch has continued along the same general plan as that followed during previous years. A great deal of it has been an innovation in educational work in agriculture, and being much needed, the services rendered by my Seed Commissioner and his staff of trained experts, have been appreciated by the farmers in all parts of Canada. It is already evident that, as a result of the educational propaganda that has been conducted by this branch of my department, substantial progress has been made in the production and use of cleaner and better seed grain and other seeds, and in the suppression and eradication of noxious weeds. The main object of this work is to increase the yield and improve the quality of field and garden crops.

THE SEED SUPPLY AND THE CROP OF 1907.

The cereal crop of 1906 was a satisfactory one, and from it a supply of good sound seed for last season's crop was available. The crop of 1907 was, on the whole, fairly satisfactory, although the spring was unusually late. Some of the districts in the western provinces suffered severely from the prolonged cold of the early spring, and the cool and rather moist weather of the summer months. As a result, the crops over a part of Manitoba, Saskatchewan and Alberta were late in maturing; the oats and barley, in particular, were seriously injured, for the purpose of seeding, by the early frosts. As soon as information was received that in some districts the crop had been injured by frost, I instructed the officers of the Seed Branch who are permanently located in the western provinces to thoroughly investigate the matter and determine the extent of the injury done. They were directed to institute a vigorous campaign of instruction, in order to prevent the use of apparently sound seed oats or barley, which had been frozen and rendered worthless for seeding, the use of which would endanger the crop of 1908.

A large number of samples of grain from the unfortunate districts were collected by my officers and submitted to germination test. Many samples were also sent in by the farmers themselves. Early in January the results of these germination tests of oats and barley, together with summary information as to the effect of using frozen seed grain, were printed in bulletin form and 60,000 copies were distributed to farmers. Arrangements were made for compiling the names and addresses of farmers, in districts where the crops were not injured by frost, who had good clean seed wheat, oats or barley in quantity for sale. The data thus obtained were printed in a pamphlet and generally distributed early in March of this year to the farmers who were forced to purchase their supplies of seed grain.

INSPECTION OF THE SEED GRAIN DISTRIBUTED.

On account of the condition of the money market, it was evident early in January, and even before that time, that the farmers whose grain had been injured for seeding

would not be able to negotiate loans that would enable them to procure their supplies of seed grain; and it was ultimately deemed advisable that the interested governments should co-operate in procuring and distributing seed grain to them. All the information that had been compiled by the Seed Branch was made available for that purpose, and the services of its officers were utilized in inspecting the grain purchased, in respect to its purity, and in making germination tests of the vitality of all seed about which there could be any question. For that work it was necessary to provide competent seed inspectors at London and Liverpool, in Great Britain, Pictou in the province of Nova Scotia, Kingston, Toronto, Ottawa and Fort William in Ontario, Winnipeg and Brandon in Manitoba, Regina and Moose Jaw in Saskatchewan, and Calgary and Edmonton in Alberta. Only seed grain of apparent good quality and of the standard of purity definitely fixed for the guidance of the inspectors was accepted by them.

THE SUPPLY OF GRASS AND CLOVER SEED.

On account of the partial failure of the clover seed crop for 1906 in the province of Ontario, the supply of clover seeds for the Canadian market was not as large nor of as good a quality as it would otherwise have been. The price too was unusually high. Quite large importations of red clover seed were made by seed merchants. The supply of timothy seed for the past year was about normal, and large quantities of timothy and other grass seeds were used because of the shortage and consequent high prices of clover seeds.

It is somewhat unfortunate to have to record that the clover seed crop of 1907 was also considerably below the average in quantity produced, although the quality of the red clover seed harvested during the past season is rather above the average in point of purity. The supply of grass and clover seeds from other countries where they are produced is also reported to be short, and it is anticipated that the price of grass and clover seeds will continue to be high during the coming spring months.

In general, the supply of seed corn, field root and garden seeds available to farmers last spring was of satisfactory quality. Some complaints have been made by onion growers because of onion seed sold by the retail trade that was not suitable for use in Canada. Careful inquiry has shown that such importations of onion seed were thought to be necessary because of the partial failure of the crop at the best sources of supply for Canadian use.

ENCOURAGEMENT TO SEED GROWING.

As a means to increase the yield and improve the quality of field and garden crops, special attention has continued to be given to the production of high class seeds of those crops that are grown for seed in Canada. My department has been able further to encourage and co-operate with the Canadian Seed Growers' Association in the production and selection of high class seeds of cereal grains, corn, potatoes and other farm crops. So far as the conduct of its business is concerned, this association is quite apart from the Seed Branch, but the educational work of the association is largely a part of the duties of this branch.

The Seed Commissioner, through the staff of expert officials who are permanently located at district headquarters, has assisted with the organization and conduct of ninety seed fairs during the past season. These are held during the winter and early spring months. Exhibits of seed grain grown by the farmers in the locality, and held for sale by them in quantity, are shown in competition. It is usual for the agricultural societies, under whose auspices seed fairs are conducted, to provide prizes for the best exhibits. My department provides competent judges to award such prizes and to give lectures. These seed fairs have been successfully held during the past six years and have largely increased in numbers and usefulness.

Competitions in standing fields of seed grain, consisting of not less than ten acres, were inaugurated at the instance of the Seed Branch, commencing two years ago in the western provinces. Sixty field competitions have been conducted during the past season and were extended to the province of Ontario, where five-acre fields were made eligible for entry. They have proven to be an effective means of awakening interest in the production and selection of good seed grain and have had a wholesome educational influence. I have authorized that the plan of conducting them be continued and enlarged upon for the eastern provinces. The Seed Branch organizes a corps of competent judges, who meet in conference, for training in the use of score cards, directly prior to judging. This is done free of cost to the agricultural societies, which conduct these competitions.

Special meetings of seed growers were held during the month of June in the districts of eastern Canada where grass and clover seeds are most largely produced. The object of these meetings was to give practical instruction, particularly about weeds and their eradication, at a time of year when weed and other plant growth is most in evidence. These seed growers' field meetings, many of which are held in the open air and in fields in which a seed crop is being produced, have proven to be exceedingly beneficial, and it is expected that they will be continued.

CONDITIONS OF THE SEED TRADE.

The retail seed trade in Canada is conducted in part by professional seedsmen, but a large portion of the business is done by grocers, druggists and other persons, whose main business is of an entirely different character. The number of men who devote a large share of their attention to the seed business has increased, and it is reasonable to expect that the further development of agriculture will be associated with an increase in the business of seedsmen.

A comparatively small part of the seed of cereal grains used in this country enters into the commerce of seeds, and the trade in Canada may be said to consist largely in purchasing grass and clover seeds from growers, recleaning them, and distributing them, either directly or through the medium of local seed vendors. In addition to the trade in grass and clover seeds, supplies of seed corn, field root, and garden seeds are gathered together by wholesale seedsmen, the greater part of them being imported from Europe and the United States, and distributed through the various channels of the trade.

While it is but fair to state that the seedsmen and seed vendors of Canada are as honourable and reliable as are those of any other country, the work of investigation into the condition of the seed trade, conducted by the Seed Branch, cleary indicates the need for continued watchfulness of the quality, in respect to both purity and vitality, of the various kinds of seeds that are sold in the retail trade; and I have instructed that this work of investigation be continued and that wanton carelessness or unscrupulous acts on the part of seed merchants be exposed, either as provided by the Seed Control Act, or if not covered by that Act, through publication of the results of such investigations. The crop losses that result through the use of seed that is foul with noxious weeds, or seed that is exceedingly low in percentage of vitality, amounts to very considerable in the aggregate; and it is expedient that every reasonable means be taken clearly to impress upon seed merchants the need for great care to prevent repetition of such crop losses.

THE SEED CONTROL ACT.

The Seed Control Act came into force in September, 1905. During the first year of its administration it was used as a basis for a vigorous educational campaign among seed merchants, who were provided with copies of the Act, the import of which was clearly explained to them by seed inspectors, who visited them at their places of business during the season of the seed trade. When found to be exposing seed for sale in violation of the Act, seed merchants were summarily warned that a repetition of such violation would not be excused. During the season of 1907 this educational campaign was continued. It was found necessary to enter prosecutions on eighteen counts against twelve seed merchants, which prosecutions were conducted during the months of June and July. There is no doubt in my mind but that this educational work, supplemented by prosecutions under the Act where necessary, has resulted in securing a general observance of the provisions of the Act on the part of seed merchants and farmers in general. Now that the Act may be said to be generally understood, on account of its operation during the past two years, the members of the seed trade will have less reason to expect lenient treatment when they are found by inspectors to have violated the provisions of the Act.

SEED COLLECTIONS.

In order better to enable the members of the seed trade to conform to the provisions of the Act, I authorized that comprehensive collections of weed seeds be provided to them at a nominal cost, which collections contain specimens of seeds of all of the noxious weeds that are legislated against in the Act. It is gratifying to know that seed merchants have appreciated this service and have availed themselves of the privilege of securing the means which better enable them to comply with the Act; and also that very few of the seed merchants who have provided themselves with these reference collections of seeds have been found thereafter to have unlawfully sold seed grain or other seeds containing the seeds of these noxious weeds.

SEED LABORATORIES.

The seed laboratories at Ottawa and Calgary, Alta., have tested 13,924 samples of seeds, for purity or germination or both, during the past fiscal year. This shows

a very large increase in the services rendered, and, in consequence, I found it necessary to augment the staff of temporary assistants employed in this work during the winter and early spring months.

A large proportion of the samples tested consisted of cereal grains sent in for germination test from the provinces of Manitoba, Saskatchewan and Alberta, and the increase of samples tested is of an extraordinary nature. When the normal seasonal conditions obtain in those provinces, a comparatively small number of samples are submitted for germination test, and it is not anticipated that the demand on the part of farmers for services from the seed laboratories will continue to be so great as has been during the past season. It is gratifying to be able to state that, on the whole, reasonably prompt service was rendered to both seed merchants and farmers who desired information about the quality of their seed. During the months of January and February some slight delays occurred in issuing reports on germination tests, but the information concerning all samples submitted was forwarded to farmers in ample time for seeding operations.

In addition to the 8,645 samples which were tested in the Ottawa seed laboratory, for farmers and seed merchants, six hundred and thirty samples were collected by purchase from the retail trade in all of the provinces, for the purpose of investigating the conditions of the trade in seed corn, field root, and garden seeds. The following tables give a summary of the work conducted in the seed laboratories for the year ended March 31st:—

SEED CORN—FIELD ROOT AND GARDEN SEEDS.

RESULTS OF INVESTIGATION.

Kind of Seed.	Number of Samples Tested.	Per Cent of Germination.				Number of Samples.	
		Min.	Max.	Average.	Standard for good seed.	Vitality up to standard for good seed.	Vitality less than ⅔ of standard for good seed.
Corn (Sweet)	39	48	100	85	95	4	5
" (Field)	66	42	100	90	95	29	2
Asparagus	1			66	85		
Beans	10	60	100	84	90	3	
Peas	13	33	98	87	97	2	1
Beet	42	96	297	168	160	20	4
Mangel	31	9	263	203	160	21	5
Cabbage	27	62	98	82	93	3	
Cauliflower	6	90	99	97	90	6	
Kale	2	69	88	79	90		
Radish	35	51	100	89	95	17	2
Rape	2	95	100	98	95	2	
Turnip	72	16	100	71	95	26	8
Carrot	60	2	97	70	80	15	21
Celery	12	3	70	38	50	5	7
Cress	5	84	100	94			
Citron	3	80	100	90	92	2	
Cucumber	19	67	98	86	90	6	
Musk melon	5	72	99	85	90	2	
Pumpkin	8	74	100	89	90	5	
Squash	13	76	100	87	90	6	
Watermelon	11	56	98	78	90	1	1
Leek	5	11	76	40			
Onion	31	26	97	85	90	5	4
Lettuce	20	76	100	95	90	16	
Parsley	6	25	85	50	65	1	2
Parsnip	22	10	68	42	65	1	11
Pepper	5	38	82	52			
Rhubarb	5	64	89	79			
Sage	6	60	92	70			
Savory	4	21	39	31			
Thyme	2			71			
Marjoram	1			73			
Salsify	10	19	92	50	85	2	7
Spinach	7	25	93	46	90	1	3
Tobacco	1			53			
Tomato	14	62	100	85	90	5	
Total samples tested	621					91	76

SAMPLES TESTED FOR SEED MERCHANTS AND FARMERS AT THE OTTAWA SEED LABORATORY.

Kind of Seed.	Maritime Provinces.	Quebec.	Ontario.	Western Provinces.	Foreign.	Total.
Red Clover	32	465	402	3	7	909
Alsike	23	80	212		2	317
Timothy	32	154	228	5	8	427
White Clover	3	38	4			45
Alfalfa		4	17	1		22
Mixtures of clovers and grasses	2	6	9	1		18
Grasses		19	22	13		54
Roots and vegetables	1	8	556	10		575
Flowers			23			23
Other kinds	1	1	44	2		48
Cereals	19	176	72	5,905	1	6,173
Flax			2	32		34
Total	113	951	1,591	5,972	18	8,645

SAMPLES TAKEN BY SEED INSPECTORS AND TESTED UNDER REGULATIONS OF SEED CONTROL ACT.

—	Red Clover.	Alsike.	Timothy.	Mixtures.	Cereals.	Total.
Ontario	88	7	6	6	1	108
Quebec	15				7	22
New Brunswick	24		2			26
Nova Scotia	6					6
Total	133	7	8	6	8	162

Out of a total of 162 samples taken, 145 were suspected by the inspectors of being exposed for sale in violation of section 8 of the Seed Control Act, which reads as follows:—

'No person shall sell, or offer, expose or have in his possession for sale, for the purpose of seeding in Canada, any seeds of timothy, alsike or red clover, or any mixture containing the said seeds, if the seeds of the weeds named in this Act are present in a greater proportion than five to one thousand of the seed sold, or offered, exposed or held in possession for sale.'

PUBLICATIONS.

The results of investigation work in connection with the trade in seed corn, field root, and garden seeds have been compiled and published in bulletin form for general distribution.

Summary results of the field competitions conducted in the western provinces, and also in the province of Ontario, were compiled, printed and distributed to the interested farmers in the respective districts.

A pamphlet giving the names and addresses of farmers who exhibited high class seed grain at sixty-three of the seed fairs in the provinces of Manitoba, Saskatchewan and Alberta was published early in March and distributed generally to the farmers in those provinces. The information contained in the pamphlet showed the total quantity of seed held for sale by the exhibitor and its condition in respect to both purity and vitality. This bulletin was issued this year because in parts of those western provinces the unfavourable climatic conditions had made the seed supply unreliable.

During the month of June circulars were issued to 25,000 farmers in the provinces of Quebec and Ontario, relative to the supply of clover seeds and outlining some precautions that would have to be observed in order to secure a reasonably good supply of desirable seed to meet the requirements of the trade for the coming season.

'FARM WEEDS OF CANADA.'

I am very glad to have been able this year to issue an excellently illustrated and carefully prepared book dealing with the farm weeds of Canada. An edition of 15,000 copies has been received from the printer, and these are being distributed in a way to benefit the greatest number of people. The many favourable comments which I have

received concerning the excellence and usefulness of this publication has been a source of gratification to me. Copies of it have been sent to all the public libraries and to the educational institutions in Canada that are above the grade of elementary schools. An additional supply of 10,000 copies has been ordered. As soon as these are available for distribution, they will be sent to the rural schools in Canada in which libraries are maintained, for use as a reference book on noxious weeds for the teachers, pupils and farmers of the school districts. In order to meet the demand for this book from these public institutions, I found it necessary to withdraw it from general distribution to individuals, much as I should like to have provided every farmer in Canada with a copy of it.

THE LIVE STOCK BRANCH.

The Live Stock Branch, which, in July, 1906, was united for administrative purposes, under the control of the Veterinary Director General, with the Health of Animals Branch, the work of these two branches being very similar and having many points of contact, has during the past year been developed to a considerable extent.

The final steps in the organization of the National Records, with the exception of the admission of such new records as may from time to time seek incorporation, have been taken by completing the absorption of the old provincial records, which differed slightly in some respects from those at first nationalized. More or less difficulty was in some cases encountered in bringing about the desired assimilation, but all obstacles have been overcome with the happy result that there is not now in Canada more than one record of an official nature for any breed of live stock. The greatest trouble met with was in the province of Quebec, where not only were there two original records, viz.: those for French Canadian horses and French Canadian cattle, but where the rules of entry or registration for other classes of live stock, especially sheep, differed to a considerable extent from those recognized as authoritative in the other provinces. By the exercise of patience and the adoption of a policy of education and explanation, the questions in dispute have been settled in a manner satisfactory to all except a very few breeders, who were unfortunate enough to own animals the breeding of which could not be traced sufficiently far to entitle them to registration in the established records.

It was found necessary in order to bring about these results, to organize a small commission for the purpose of inspecting and examining into the breeding of such French Canadian horses as it was desired to record in the book of record organized for that breed. This commission was composed of two representatives of the French Canadian Horsebreeders Association, and two gentlemen representing my department, and with them travelled one of my veterinary inspectors, who also acted as secretary for the commission. The work done so far has been exceedingly satisfactory, and although not quite completed, will reach a conclusion early in the coming year, it having been decided to accept no horses for entry in this book after December 31, 1908. It is to be hoped that the efforts of the association, coupled with those of the department, will be successful in re-establishing on a sound and permanent basis, the old French Canadian breed of horses which, owing to the indiscriminate admixture of other blood has, of recent years, been threatened with extinction.

It was found necessary to follow a somewhat similar policy, although on a much smaller scale, with regard to the various breeds of sheep in the province of Quebec. These sheep had been registered in the old provincial records, the standard of which was not quite equal to that recognized by the sheepbreeders' associations elsewhere in the Dominion. This condition of affairs necessitated careful inspection of flocks and equally careful investigation as to the eligibility of the individuals for registration. By employing the services of an expert judge of sheep to visit all the flocks, the qualification of which for registration was in dispute, it has been found possible to admit to the national records all but a very few of the animals formerly recorded under provincial associations.

A number of new records have been organized, among which may be mentioned those for Percheron horses, Belgian horses, and Ponies. The work of the National Records Office is proceeding smoothly and satisfactorily, as is evidenced by the fact that practically no complaints are being received from any part of the country, and that this organization which, needless to say, involves the safety and welfare to a greater extent than all other factors combined, of the great stock breeding industry of Canada, is being conducted under the wing of this branch of my department not only without friction but almost without any one being made publicly aware of its existence.

A great deal of work has, as usual, been done by the Live Stock Branch in furnishing expert judges for fairs and speakers for institute meetings, as well as instructors for live stock judging classes. Many different series of meetings have been held, some organized by the Live Stock Commissioner himself, and many others by the various provincial departments of Agriculture with whom the officers of this branch of my department invariably co-operate when requests for their services are made.

The benefits resulting from these meetings have been very great, especially in the province of Quebec, where much interest has been manifested by farmers in advanced methods of agriculture and especially in the development of the live stock industry. In the Maritime Provinces also much good work is being done by the holding of institute meetings, and judging schools, at which our live stock experts delivered addresses and officiated as teachers, by the supplying of trained judges for live stock at various fairs and by the Amherst Winter Fair, which held under the auspices of the Maritime Stock Breeders' Association, with the assistance and support of the Live Stock Branch of my department, has been of incalculable benefit in arousing and maintaining interest in live stock production.

In Saskatchewan, Alberta and British Columbia much good has also been accomplished along similar lines, many of the new settlers having had but little experience in practical agriculture, being greatly encouraged and assisted by the advice of the experienced stock men sent out by my department, and by their practical demonstrations in the matter of live stock judging.

A new departure has been made by the present Live Stock Commissioner in devoting considerable attention to the interests of those agriculturists engaged in the production of live stock for commercial purposes as distinguished from those who confine their operations to the breeding of pedigreed animals.

Speaking generally, it may be said that among the farmers of Canada those engaged in the production of pure bred stock are well able to look after their own interests, being as a rule men of advanced ideas who from the nature of their transactions naturally and rapidly acquire a knowledge of modern business methods. On the other hand, the farmer who produces stock solely for commercial purposes is not unfrequently a loser owing to his lack of expert knowledge of the requirements of the market, the actual value of his produce or the conditions attending the sale, handling and transportation of live stock between the producer and consumer. With a view of improving matters in this regard, and protecting as far as possible the interests of the producer, steps have been taken to obtain and place in his hands all possible information likely to be of use to him in disposing of his produce.

This work is still in progress, but will to a limited extent be complete during the coming year, with, I trust, beneficial results to all concerned.

The establishment of the Record of Performance in the case of pure bred dairy cows is progressing favourably, the work having increased to such an extent as to render necessary the constant employment of another inspector in Ontario and Quebec, while in some of the outlying provinces work of the same kind is being performed by officers of the Dairy Branch, acting on behalf of the Live Stock Commissioner.

A number of valuable bulletins on live stock subjects have been issued during the year, while several productions of the same kind are at present in course of preparation.

Perhaps the most important event of the year, so far as this branch of my department is concerned, was the holding in Ottawa during February last of the large and representative Convention of the National Live Stock Association. The last meeting of this body was held in 1905, and I considered it advisable in view of the large interests involved, and of the great progress and development which has since taken place throughout the Dominion to again bring together the accredited representatives of the various live stock and record associations, so as to afford them an opportunity of exchanging views and discussing matters of general and special importance. The meeting, which lasted three days, was an unqualified success, delegates being present from all parts of Canada, and the discussions being interesting and beneficial to a marked degree.

Many important resolutions were debated, and such as were approved are receiving my earnest consideration and that of my officers.

On the whole the work of this branch has during the year been of an exceedingly satisfactory character, while the plans for future activity promise even more gratifying results.

EXPERIMENTAL FARMS BRANCH.

The experience of another year has added materially to the accumulation of useful facts which have been worked out by careful observation at the several experimental farms. The publication of these from year to year in the reports and bulletins issued, leads to their free use by the most intelligent and practical farmers in their daily

practice. The confidence of the farming community in the reliability of the results obtained at the experimental farms, leads to a constantly increasing demand for the publications issued which are carefully preserved and referred to from time to time as information is needed.

During the past year good progress has been made in all the separate branches bearing on farm work. In the cereal division many promising new sorts of wheat and barley produced on the farms have been further tested, some of which have been sent for trial to different parts of the Dominion, where their special properties are likely to make them most useful. Distinct gains are being made in the production of earlier ripening varieties of wheat combined with high quality and productiveness, which will no doubt make many of these products most valuable in the different climates of Canada. A new and important fact regarding the quality of wheat has been further demonstrated, that is that wheat kept over for a year, improves considerably in quality, which may have a direct bearing on the success of the proposed northern route for the transportation of grain.

In the Agricultural Division a most interesting series of tests have been made in the use of frozen wheat for the feeding of swine and the fattening of steers, which have shown that the lower grades of frozen grain may be very profitably used for this purpose. Many useful facts have also been accumulated in connection with the rotation of crops, and the growth of fodder plants and roots.

In the Horticultural Division many new seedling apples have been fruited during the past year, among which are some very promising late keeping sorts of good quality, which will probably become important varieties both for the home and export trade. Much interesting work has also been done with other fruits and vegetables.

In the Chemical Division much excellent work has been accomplished in determining the relative value of different sorts of cattle foods offered on the market, also in ascertaining the qualities of different sorts of wheat. Many varieties of barley have been analyzed especially with the view of determining the proportion of nitrogen in each. Investigations have also been conducted in many other lines bearing on farm crops.

In the Botanical and Entomological Divisions the life histories of many insects have been studied and remedies tested for those which injure crops. Further studies have also been made with weeds and the best measures for eradicating them. Many useful facts bearing on the subject of Bee Keeping have also received the attention of this division.

Experiments have been continued in the Poultry Division with trap nests, as a means of detecting good and poor layers, also with different sorts of foods and different methods of feeding. The usefulness and economy of frozen wheat in this connection has also been tested. Much other work has also been done in this branch helpful to those who are following this industry.

The numerous experiments with fertilizers begun by the director twenty years ago have been continued and much useful information in this connection has been worked out. The hardy cross-bred varieties of apples which have been produced for

the Canadian Northwest are proving reliable wherever they have been tried, and are fast establishing their reputation for general usefulness. These are now being freely supplied by the nurserymen, who are propagating them in considerable quantities.

AGRICULTURAL AND LIVE STOCK DIVISION.

In soil cultivation and crop growing very important lines of work continue to occupy attention. As among the more important might be mentioned:—

(1) Experiments to determine the cost of growing different crops under various conditions. The crops experimented with being chiefly corn for ensilage, mangels, turnips, rape, clover hay, timothy hay, and oats.

(2) Experiments to determine how most certainly to lower the cost of producing the unit of crop that is the ton of roots, ensilage, hay or grain, stored in each case. As a means to this end the introduction of larger machines is proving very effective. The increasing of the crop yield by growing the most productive varieties is being found to be of some value. The thorough cultivation of the soil and the following of proper rotations are, however, the apparently most effective means to this end.

(3) Experiments to determine the influence of depth of ploughing accompanied by deep cultivation or what might be called light subsoiling is being compared with deep ploughing. The work is not yet far enough advanced to permit of any conclusion being drawn.

(4) Experiments to determine the best rotations for different purposes. Rotations of varying duration are under test. The more practicable so far seem to be:— (a) Three-year rotation as follows:—1st year, corn or roots; 2nd year, grain seeded down 10 lbs. clover, 5 lbs. timothy; 3rd year, clover hay. The crops are then repeated in the same order. (b) Four year rotation: 1st year, corn or roots; 2nd year, grain, seeded down, 10 lbs. clover, 10 lbs. timothy per acre; 3rd year, clover hay; 4th year, timothy hay or pasture. The crops are then repeated in the same order. If, however, it is desired to grow relatively more hay or leave a larger part of the farm under pasture this rotation might be expanded to a 5 or 6-year rotation by leaving down to hay or pasture for 3 or 4 years instead of for 2 years only. (c) Five year rotation: 1st year, corn or roots; 2nd year, grain, seeded down 10 lbs. clover, 10 lbs. timothy per acre; 3rd year, clover hay or pasture; 4th year, timothy hay or pasture, ploughed in August; 5th year, grain, 10 lbs. clover per acre for fertilizer. The crops are then repeated in the same order. It may be extended by leaving 3 or 4 years instead of 2, under hay or pasture.

(5) Experiments to determine the best methods of cultivating the soil are constantly being carried on. One finding of importance is that where it is desired to grow grain on sod, the following preparation has proven very much superior to any other. Plough the sod in August as early in the month as possible. Roll at once and cultivate at frequent intervals until the sod has rotted well. When the sod has broken down ridge up with a double mould board, plough into ridges two feet apart or thereabouts and 7 or 8 inches high, just as though preparing for roots. Leave in this shape till the next spring, when break down with disk harrow or other implement and seed.

Here as on most other farms in eastern Canada, live stock is considered of the very greatest importance. Its importance lies, it is considered, along several lines:—

(1) As a means of maintaining and even increasing the fertility of the soil, by producing manure.

(2) As a profitable home market for every product from the land.

(3) As profitable employment in winter when other farm work is impossible.

The classes kept are horses, cattle, sheep and swine. And in addition to the above mentioned reasons for the maintenance of considerable herds and flocks here they are used for experimental feeding and breeding purposes.

Feeding tests of various kinds are continually under way and considerable information *re* the values of different feeding materials is sent out from time to time. Pure bred animals are kept, for the most part, and the surplus stock of good quality is sold for breeding purposes.

Horses are not bred here, but are bought in from time to time as required. Experiments in feeding horses are frequently under way.

Dairy cattle are on account of the location of this farm the most important class. Four breeds are at present under test, Shorthorns, Ayrshires, Guernseys and Canadians. Butter is manufactured on the farm and sold locally.

Beef cattle are not bred save in so far as the milking strain of Shorthorns bred here may be said to produce beef animals. Steers are fed in considerable numbers, however. Experiments of various kinds with feeding steers are always under way.

Sheep are kept in small numbers only. The breeds represented are Shropshires and Leicesters.

Swine have been kept in very large numbers during the past year. Three breeds are handled, Yorkshires, Berkshires and Tamworths. Feeding experiments during the year were confined for the most part to testing the value of frozen wheat for pork production.

HORTICULTURAL DIVISION.

The Horticultural Division of the Central Experimental Farm may be divided into three departments, viz.: that relating to fruits and vegetables; that relating to forest trees; and that relating to the arboretum and botanic garden.

The main experiments which are being conducted with fruits and vegetables were continued in 1907. Some of these relate to the testing of varieties already on the market; the origination of new sorts from seedlings and by cross fertilization; the finding of seedlings of merit originated in different parts of Canada and testing them at the Experimental Farm. Experiments are also being carried on with different spray mixtures to determine which are the most effective and, if possible, to discover new ones. Experiments are also being conducted to determine if the individuality in trees is continued in grafted scions from them.

New strains of tomatoes, beans, and peas are being developed by selection with special reference to earliness. Efforts are also being made to obtain by selection strains of potatoes which are comparatively immune to blight and rot.

With especial reference to the season of 1907, it may be said that the apple crop at the Experimental Farm was the largest yet obtained. It was a good one, both in quantity and quality, and while complaints were made in some parts of Ontario and Quebec of the small size of the fruit and injury from spot, the results of the good cultivation and thorough spraying which the trees get from year to year at the farm were very apparent in the cleanness and fair size of the fruit. The plum crop was a medium one and the cherry crop rather light. One of the largest crops of grapes raised at the Central Experimental Farm was produced in 1907, but owing to the cool autumn the later varieties did not ripen so thoroughly as in some years, and a number of sorts did not ripen at all. As the results of the testing of a large number of kinds of grapes several are now known which ripen their fruit at Ottawa practically every year.

There was a medium crop of raspberries and currants of good quality. During 1907 a bulletin on bush fruits was written by the Horticulturist, in which the experiments for the past twenty years with raspberries, blackberries, currants, and gooseberries were reviewed, conclusions drawn from them, and recommendations made.

As already stated, one important line of work has been the origination of new varieties of cross-bred and seedling fruits. Many of these varieties fruited in 1907, and, as in 1906, a fair proportion of them were of such promise that they are being propagated with a view to more thoroughly testing their relative merits with the named varieties already on the market.

The Vegetable Growers having expressed a desire that some trial shipments of tomatoes be made to Great Britain to learn if Canadian tomatoes could be profitably sold there, four small shipments were made to Glasgow in cold storage in 1907. The tomatoes from all four shipments arrived in fair condition, but owing to the great quantities of tomatoes offered for sale of home grown and European production, the Canadian product, which was not so fresh nor so evenly coloured, could not be sold at remunerative prices. This condition of the market seems likely to occur every year.

In addition to other tests with potatoes, experiments were continued in 1907 to determine if it is possible to develop a strain which will be immune to blight and rot. Some varieties tested at the Experimental Farm are much more immune than others, and these were made the starting point for work in selection. The tubers from the most productive and most resistant hills are kept separate and planted from year to year. The results from this work are promising.

The branch of the Horticultural Division relating to forest trees is furnishing every year information which should prove valuable to the farmers of Canada. About twenty-one are devoted to timber trees grown as belts along two sides of the farm in solid blocks of individual species, and mixed together. Annual measurements are taken of the height and diameter of the trees. Notes are also taken of the effect which the stronger growing trees have on the others, and after twenty years' growth it is now possible to tell farmers, with a fair degree of accuracy, what kinds of trees will grow best together with the least injury and greatest good to both, and also the most satisfactory distance apart to plant the trees. In 1907 the trees on the whole con-

tinued to make good growth. The results of the work in the arboretum and botanic garden are of value to all Canadians who desire to improve their home surroundings, and to learn more about the individual characteristics of the many beautiful trees, shrubs, and herbaceous plants that will succeed in Canada. Students of botany will also find much to interest them. In this part of the farm there are now growing more than 3,000 species and varieties of trees and shrubs and more than 2,000 of herbaceous perennials. Records are kept of the hardiness, relative growth, flowering period and other interesting matters relating to the plants, and from time to time lists are published of the best plants for various purposes. The arboretum and botanic garden looked well in 1907, and attracted considerable attention from the visitors to the farm.

During the year a much-needed building was erected for the Horticultural Division in which is a good cellar for storing fruit with especial reference to the testing of the keeping qualities of the varieties being grown and the many seedlings which are now fruiting. There is also a cold storage chamber, exhibition room, work room, office room, and rooms for storing material used and produced in the Horticultural Division.

CHEMISTRY DIVISION.

Wheat.—A considerable amount of the time of the chemical staff has been devoted during the past year to investigation relating to this cereal. The various factors which are supposed to modify and control 'strength' or 'quality' in wheat and flour have been critically examined and corelated, as far as seemed practicable, with the results from the baking tests. The relation of the ash constituents to the nitrogenous compounds and the proportion of sugar present in flours, in so far as they may affect the shape and volume of the loaf, have also been studied. The results are set forth in Part II. of bulletin No. 57, on 'quality in wheat,' and Part II. of bulletin No. 60, on 'The Grades of Wheat of 1907,' now in press. In certain important particulars our knowledge respecting the chemistry of wheat has been materially advanced.

The development of soft or starchy kernels in the crop from hard wheat when sown on newly broken scrub land, in certain districts of the Northwest, has been studied. This deterioration, it would appear, results from prolonged vegetative growth of the wheat plant, in other words, a retardation of the maturation or ripening of the berry, and is caused by an excessive amount of moisture in a soil containing large percentages of vegetable matter and nitrogen. Presumably, it is only a matter of a comparatively short time before such soils will produce hard wheat, as with cultivation and fallowing they will necessarily lose a part of this organic matter and be less retentive of moisture.

As a result of the unfavourable weather conditions that prevailed last season in many districts of the Northwest, a considerable amount of 'frosted' wheat has been put on the market for feeding purposes. It has been found that this grain is characterized by a percentage of nitrogen somewhat higher than that in normally ripened wheat.

A small proportion of this nitrogen appears to exist in a non-albuminoid form—somewhat less valuable from the feeding standpoint than the true albuminoids or gluten. However, allowing for this, frozen wheat, provided it is digested by the animal, should possess a feeding value quite equal, if not superior, to ordinary well-ripened wheat. The excessive hardness of the frosted wheat necessitates that the grain should be finely ground (and possibly for certain classes of stock, soaked) so that it may be the more easily attacked by the digestive fluids and assimilated. Its judicious mixture also with a more bulky meal, as bran or ground oats, would undoubtedly further its digestion.

The influence of age on wheat and flour as it may affect their breadmaking value, has been investigated, but as yet the results from the chemical work do not allow any very definite conclusions being drawn as to the nature of the changes which apparently take place towards an improvement in quality.

Barley.—A considerable number of Canadian grown and imported barleys both two-rowed and six-rowed, have been submitted to analysis. The results, in the majority of instances, show that the nitrogen content is increased by the growing of European barley, at Ottawa.

Fodders and Feeding Stuffs.—The forthcoming report of the chemist will contain the analyses, with notes as to relative nutritive values, of many of the milling and manufacturing by-products on the Canadian market. This information allows our farmers to intelligently make their purchase of feeding stuffs and is consequently of considerable value.

Alkali Soils.—The occurrence of 'alkali' in certain districts of the Northwest provinces and British Columbia has made it necessary to study the nature of these injurious salts and methods of reclamation for lands so affected. The information gained from this research is now available, having been collected and published in bulletin form (Bulletin No. 4, Second Series.)

Insecticides and Fungicides.—The composition of several new materials of this character has been ascertained and their probable value outlined, and the information furnished our fruit growers.

Certain new and very promising sprays have also been devised, using flour instead of soap as an emulsifier. They are easily prepared, stable and apparently effective. Details of preparation with formulæ are given in the chemist's report.

Water from Farm Homesteads.—The work of examining well waters as to wholesomeness has been continued. During the past year over 100 samples have been analyzed. The waters have been forwarded from all parts of the Dominion and this branch of the chemical work is one that is much appreciated by the agricultural public.

As far as time permits the chemist's services in the examination of samples sent in by farmers and in the answering of questions relating to the chemistry of farming, have, as in the past, been freely given.

ENTOMOLOGICAL AND BOTANICAL DIVISION.

The work of the Entomologist and Botanist and his staff has been of the same nature as in past years. The large correspondence from farmers in all parts of the Dominion shows that they are appreciating the useful information which is being constantly disseminated concerning the habits of injurious insects and the best ways of preventing their attacks. While there has been no serious outbreak of any new kind of injurious insect during 1907, many of the older enemies have occurred in different districts and done appreciable harm.

Cereals.—Owing to the cold dry spring and the cool weather which prevailed throughout the year, crops of all kinds were backward and late throughout the country. In Manitoba the Wheatstem Sawfly was more than usually abundant, and the Grain Aphis was troublesome in a few localities in the eastern portions of Saskatchewan. Oats in Prince Edward Island were considerably injured by the same insect, and wheat in the same province was much reduced by the Wheat Jointworm.

The Pea Weevil, which has done remarkably little harm for a year or two, was again destructive in Bruce County, Ontario.

Grasshoppers were very abundant and wrought considerable destruction in restricted localities, as in some localities along the Ottawa River in Ontario and in the counties of Quebec province lying north of the same river. Complaints of these insects were also received from Manitoba and British Columbia.

Cutworms were the cause of more or less loss, as usual, in all parts of the Dominion. Most of these complaints were with regard to their injuries to garden plants; but there was a remarkable outbreak of the Variegated Cutworm in southwestern Ontario towards the end of July. The injury was most marked in the neighbourhood of Leamington, where hordes of this large and late-occurring species swept everything before them. The poisoned bran remedy was at once recommended and was used with great success.

Roots and Vegetables.—The Small White Cabbage Butterfly did much harm to cabbages of all kinds in Manitoba and in the older provinces. Dusting the plants with pyrethrum insect powder, one pound in four pounds of cheap flour, with freshly slaked lime, or with Paris green and flour, one pound in 25 pounds, were all quite effective when applied promptly.

The Black Blister Beetle was troublesome for a short time on potatoes in the prairie provinces.

Fruit Crops.—The Codling Moth was unusually destructive to apples in western Ontario. Regular spraying with poisoned Bordeaux mixture for the first brood, and then banding the trees with strips of burlap after the middle of July, are effective means for controlling this persistent enemy of the fruit grower. The burlap bands must be examined at least once a week and the cocoons destroyed, of all caterpillars which have resorted to them to spin up. The Codling Moth has appeared in two or three more localities in the province of British Columbia and is probably widerspread than is as yet known.

Fruit insects of lesser importance which in 1907 appeared in unusual numbers, were: in the eastern provinces, the Rusty Tussock Moth, the Hickory Tussock Moth and the Spotted Tussock Moth, the Red-humped Apple-tree Caterpillar, and the Yellow-necked Apple-tree Caterpillar. These were all easily destroyed by spraying promptly with arsenical washes.

The Oyster-shell Scale was reported from many localities. The standard remedy for this insidious enemy are the invigorating of the trees by special cultivation or spraying them late in autumn with a weak lime whitewash, or in summer with kerosene emulsion or whale-oil soap solution.

The Brown-tail Moth, which was reported to have established itself in Nova Scotia and New Brunswick, has been carefully watched by the provincial government of Nova Scotia under the direction of Prof. Cumming, of Truro; and large numbers of the winter nests were destroyed during the winter. During the summer of 1907 comparatively little injury was done in the orchards of Nova Scotia; and it is to be hoped that this enemy of the New England States may be satisfactorily controlled, owing to the vigorous way in which it has been dealt with.

Grass and Fodder plants.—The collection of grasses and other fodder plants has been increased and has attracted much attention from visitors to the Central Experimental Farm.

Museum.—The collections of the plants and insects in the Division of Entomology and Botany have been very much increased, and now form a valuable source of reference to farmers and students, who make frequent reference to them.

The Entomologist and Botanist has been able during the past season to visit many places in different parts of the Dominion and deliver addresses upon insects beneficial and injurious, upon weeds and other plants, and also upon various nature study objects. He also prepared for the Seed Commissioner's Branch an extensive publication upon the worst farm weeds of different parts of the Dominion. The illustrations for this beautiful work were prepared by Mr. Norman Criddle, of Aweme, Manitoba, an expert naturalist and artist. The book has been received with very general satisfaction by those for whom it was prepared, and an enlarged edition with a few more plates is in contemplation.

CEREAL DIVISION.

The past season was very favourable for cereals at Ottawa and good progress was therefore made in the work of selecting and propagating new strains and varieties which are not yet ready for test at the branch experimental farms. The propagation on a large scale of such sorts as are particularly promising is carried on chiefly at Indian Head and Brandon. The season at Brandon was fairly favourable, but the grain at Indian Head did not in all cases reach full maturity before the autumn frosts. Fortunately, however, most of the important new sorts gave a crop which can be used for seed purposes and thus the propagation of these varieties for distribution will not be seriously delayed.

IMPROVED STRAINS OF WELL-KNOWN VARIETIES.

The improvement of the more important varieties of grain by careful selection is being pushed rapidly. Some of the new selections are now available in considerable quantity though of others only a very small amount is on hand. Selected strains of Preston and Stanley wheat are being distributed this year for the first time; and more carefully selected types of the same varieties are being propagated for distribution, along with improved early strains of Red Fife wheat.

NEW VARIETIES.

Though it is obviously undesirable to introduce into general cultivation a large number of new varieties of grain, which would cause much confusion, it is clearly essential that very many new sorts must be tested at the experimental farms in order that the best possible kinds may be discovered for the various grain growing districts of this country.

Among the new sorts introduced from abroad last season may be mentioned some extremely early varieties of barley from high altitudes in northern India and Tibet. Selected strains of some of these are being propagated, and may prove useful in our most northern agricultural lands. Some wheat from Tibet is also under test, but seems less promising than the barley.

The extensive work in the cross-breeding and selection of grain which has been carried on for the past few years by the cerealist, has now begun to give quite a large number of fixed varieties. About 130 new cross-bred sorts of wheat, oats, barley and peas are now ready for propagation this spring. Of these about 70 are early-ripening kinds of hard red wheat which have been specially selected with a view to the production of strong flour of good colour. These new varieties of grain (which represent only a part of the results of the work of cross-breeding done in the year 1903) will of course be considerably reduced in number while being propagated, all those being rejected which show noticeable defects when grown under ordinary field conditions.

Two new cross-bred sorts of early ripening wheat (Chelsea and Marquis) which are of great interest on account of their earliness and good quality, were tested at some of the branch farms last season, and are being propagated with a view to a limited general distribution next year.

QUALITY IN WHEAT.

During the past year Bulletin No. 57, of the Experimental Farm Series, on 'Quality in Wheat,' prepared by the cerealist and the chemist of the experimental farms, was published. In this bulletin a full account was given of the methods devised and used in investigating the important problem of the baking strength of flour; and the figures obtained for the strength of the flour from many different varieties of spring and winter wheat grown at Ottawa and elsewhere were also published. This bulletin, although containing a large amount of valuable information, left many unsolved problems in connection with flour strength. Research work of the same general character is therefore being continued, especially with a view to ascertaining

more definitely the effects of storage under different conditions on wheat and flour; as well as the effect of soil and climate on the strength of the flour from different varieties of wheat.

The milling and baking tests of this winter have confirmed the conclusions previously reached as to the radical improvement in the strength of many wheats and flours produced by storing them for a year, and have also shown clearly that the extent of this improvement varies greatly in different instances.

Many of the leading varieties of winter wheat and of durum ('Macaroni') wheat have also been studied this year. Striking differences in character were found within both of these classes, showing clearly that the question of variety is of great importance. Some of the winter wheats and some of the durum wheats proved excellent for bread making though in both groups the average of baking strength was rather low.

GRADES OF WHEAT IN THE MANITOBA INSPECTION DIVISION.

On account of the unusually cool character of the past summer in the prairie provinces, a considerable quantity of low grade, immature wheat has found its way into commerce. It seemed desirable, therefore, to determine the values of these lower grades for milling, baking and feeding purposes, and also to ascertain whether the coolness of the season had in an way adversely affected the higher grades. The officers of the cereal and chemical divisions have, therefore carefully studied the various grades of wheat and have obtained interesting results which are now ready for publication in Bulletin No. 60 of the Experimental Farm series.

CIRCULAR ON PRESTON AND OTHER WHEATS.

In view of the prominence into which Preston and certain other early-ripening wheats have come, a circular dealing with these varieties was lately prepared by the cerealist, and was distributed to farmers in the northwest provinces. In this circular full and precise information was given in regard to the characteristics and qualities of Preston and other early wheats, information which is based on field tests for many years and on extensive milling and baking tests in the laboratories at the Central Farm. With the facts thus fully presented to them, farmers will be enabled to reach wise decisions as to the advisability of growing any of these early varieties of wheat.

POULTRY DIVISION.

The experimental work of the past year, in connection with the Poultry Division, embraced many features of interest to poultry keepers. Among the most important are the following, which are briefly summarized:—

Continued trials of different styles of open front, unheated poultry houses. These patterns of houses are in marked contrast to the more elaborately and oft-times ill-ventilated structures of former years. The most advanced type of this description of poultry building has its southern front entirely of cotton in lieu of boards with a window in centre. It is claimed for this pattern of house that it is cheaper, easier of construction and is calculated to keep its inmates in better condition than any other.

A house of such pattern was on trial during the winter of 1907-08, in the poultry division and gave satisfactory results. Details as to construction of this house and results therefrom will be found in the annual report of the poultry manager.

The work of building up prolific egg-laying strains of fowls by means of selection by trap-nests was continued and interesting results secured. This system while sure, is unavoidably slow where fowls of different varieties are being experimented with.

The application of electricity to one or more incubators and brooders for the purpose of hatching and rearing chickens, promises to be most interesting and, if successful, to have most important and desirable results.

A trial of frozen wheat which was given to a certain number of fowls was commenced during the latter part of the winter. Results from this experiment will be learned with interest.

It is gratifying to note greater interest by farmers throughout the country in the poultry branch of their farm work. This is instanced by the increased inquiry by them as to the latest and best methods of poultry keeping.

BRANCH FARMS.

Experimental Farm for the Maritime Provinces.

At Nappan cold and wet weather in spring delayed seeding and the earliest sowing of grain there, was on May 20, and seeding was not completed until the beginning of June. In consequence of frequent wet weather later in the season the hay crop was saved with difficulty. Nevertheless fine growing weather later brought very fair crops of grain, field roots and potatoes, many of them being above the average. The experimental work at this farm included tests of all the more important farm crops.

The apple crop was not as heavy as usual, but a quantity of very fine fruit was produced.

The feeding of steers and swine has been continued, also some experiments with sheep, poultry and bees.

Experimental Farm for Manitoba.

At the Brandon experimental farm the spring also opened late, and the first spring wheat was not sown until May 9, which was more than two weeks later than usual. Notwithstanding this lateness in sowing, most of the varieties of grain ripened early enough to escape injury from frost. At this farm experiments have been conducted during the past year with many varieites of cereals, clovers, grasses and other forage and root crops.

An interesting comparative test was made during the past winter in the feeding of steers. Two groups were fed, one of which was fed and kept in the barn all winter, the other group was fed and kept outside all the winter. It is noteworthy that beef was produced on the animals kept outside at a somewhat less cost than those fed in the barn. Experiments have also been carried on with swine, poultry and bees. Tests have also been conducted with many sorts of fruits and vegetables, also with forest and ornamental trees and shrubs and flowers.

Experimental Farm for Saskatchewan.

At Indian Head, Sask, the first wheat sown in 1907 was on May 6, the sowing of oats began on May 14 and that of barley a day or two later. On this farm the average date for the sowing of wheat for the past five years has been April 17. There was thus a loss in 1907 of about three weeks in the early part of the growing period. This backward weather was characteristic of the greater part of the season and ripening was much delayed so that the frost which occurred on September 12 found the grain immature and injured it considerably. While the wheat crop was thus reduced in quantity and value the oat crop was an extraordinary one running from 100 to 110 bushels per acre.

Experiments have also been conducted here with all the more important farm crops. The trials made with many of these have been successful, and the large yields obtained from the sowing of certain varieties have encouraged many farmers to follow in the lead of the experimental farms.

Many tests have been made with fruit and vegetables and many sorts of cross-bred apples have been successfully grown. A distribution is made each year from this farm as well as from that at Brandon of samples of some of the best varieties of wheat, oats, barley and potatoes. Mail packages of young trees and shrubs are also sent out in response to requests, these are very much appreciated by the farmers who receive them. Experiments have also been conducted in the fattening of steers and swine.

Experimental Farm for British Columbia.

At the Experimental Farm at Agassiz, B.C., the weather during the spring months was also wet and cold, and for this reason the hay crop was below the average, and a similar shortage prevailed throughout the coast climate. Hot weather during June, July and the early part of August, hastened the ripening of the grain crops, and the results were quite up to the average.

The thirty-one varieties of oats under trial gave an average crop of 66 bushels 16 lbs. per acre. Fifteen varieties of six-rowed barley gave an average of 44 bushels 47 lbs. per acre; while the thirteen sorts of two-rowed barley tested gave an average of 47 bushels 13 lbs. per acre. The twenty-eight sorts of potatoes under trial gave an average crop of 474 bushels 25 lbs. per acre.

Strawberries were a medium crop. Other small fruits also did well and cherries were a good crop, but wet weather caused a large percentage of them to crack open and all fruit so injured is useless for market. Apples were a medium crop. The yield of pears was light while plums produced heavy crops fully up to or above the average. Most of the fruit crops in the interior districts were very satisfactory.

Experimental Farm for Southern Alberta.

The establishment of an experimental farm at Lethbridge in southern Alberta fills a long felt want. This farm which consists of 400 acres of land is located within that area in southern Alberta which has a scanty rainfall. One hundred acres of this land is situated so as to admit of irrigation, the remainder will be conducted in accord-

ance with the methods practised in what is known as dry farming, where the conservation of moisture is studied and provided for in every practicable way. Under such a system good crops can usually be grown with a very limited rainfall.

The past season has been devoted mainly to preparatory work, the breaking up of the land and the erection of buildings. The area broken during the season was 155 acres, of which 57 acres are in winter wheat. Experiments are being conducted to gain information as to the best time for sowing winter wheat and the quantity of seed to use per acre to obtain the best results. Thirty acres of land on the dry portion and 41 acres on the irrigable land have been got ready for spring crops. The planting of orchards, also belts and avenues of forest trees has claimed much attention and it is expected that another season will make quite a change in the appearance of this hitherto bare prairie land.

A dwelling for the superintendent, a cottage for the workmen and a suitable barn and implement shed have been erected. The land has also been enclosed by a substantial fence.

Experimental Farm for Northern Alberta.

Good progress has been made with the new experimental farm for northern Alberta which has been located at Lacombe. Notwithstanding the very unfortunate season of the past year which resulted in everything being sown late, some of the crops did fairly well. The fourteen varieties of spring wheat were all more or less injured by frost yet they gave an average yield of 21 bushels 51 lbs. per acre. Oats gave a good crop, the 31 varieites under trial averaging 86 bushels 31 lbs. per acre. The 15 varieties of six-rowed barley tested gave an average crop of 57 bushels 26 lbs. per acre, and the 13 varieties of two-rowed 39 bushels 39 lbs. per acre. Field roots and potatoes have also given very satisfactory crops.

Large supplies of forest and ornamental trees have been sent to this farm where they have been planted in windbreaks and groups. Orchards of apples have also been planted and plantations made of small fruits. Trials have been made also of many sorts of vegetables for the purpose of gaining information as to those sorts best adapted to the climate of northern Alberta.

This farm has also been substantially fenced and the following buildings erected: a house for the superintendent, a cottage for workmen, a barn and stable and an implement shed.

Experiments at Fort Vermilion on the Peace River.

Some experiments were begun this year at Fort Vermilion, where arrangements were made with a farmer to conduct experiments on his own land with most of the more important farm crops, also with fruits, vegetables, forest and ornamental trees. Owing to the difficulties attendant on a late season, the necessary supplies were delayed in transit and most of the grain late sown was injured by frost before it reached maturity. That part of the Peace River district usually produces very good wheat, and samples sent to the Central Farm of the growth of 1906 were plump and well ripened. Further experiments are being tried in that locality this year and should the season be a normal one there will no doubt be many successful trials on record.

MEETINGS ATTENDED.

The officers of all the branch farms as well as those of the Central Farm have attended many of the more important agricultural meetings held in different parts of the Dominion where opportunities have been afforded of bringing prominently before the farmers present some of the more important features connected with the work of the experimental farms.

GENERAL CROPS.

The larger part of the crops in most of the provinces of Canada in 1907 were below the average

ONTARIO.

In Ontario the cold and backward spring was followed in most instances by unusually dry and hot weather which resulted in a very light crop of hay. The average for the province was 1·18 tons per acre, whereas the average for this crop for the past 25 years has been 1·47 tons per acre. The area occupied by hay in 1907 was increased 219,635 acres, nevertheless there was a decrease in the total crop of 792,762 tons. Oats which in this province stand next to hay in importance also occupied an increased area 215,798 acres, but the crop reported was nearly 25 million bushels less than last year. The winter wheat and spring wheat crops were both somewhat above the average, but there was in each case a reduction in the area sown which had a marked effect on the total output. Most of the other important farm crops were below the average. The high prices which prevailed for all kinds of farm produce helped in many cases to make up for the shortage in weight of crops.

The scantiness of the pastures caused a falling in the production of cheese and butter, which brought a serious reduction in the volume of exports. The apple crop was on the whole a good one.

QUEBEC.

In most parts of Quebec the agricultural conditions were much the same as in Ontario a late cool spring followed by unusually dry weather resulted in a scanty hay crop and poor pastures, and both dairying and grazing suffered. The crops of grain in many districts were nearly up to the average, while in others they were distinctly below the average.

THE MARITIME PROVINCES.

The spring in these provinces was still more cold and backward, and wet weather delayed seeding very much. Higher temperatures in the later months brought the grain rapidly forward and fairly average crops were in most cases secured. In some localities the returns were above the average. The hay in many places was injured by unfavourable weather during harvest.

The apple crop was an average one and the quality of the fruit was good.

THE NORTHWEST PROVINCES.

The crops in the northwest provinces were disappointing. The cold and backward weather which prevailed during the greater part of the season made seeding late, and the maturing of the grain was also much delayed. In many districts frost occurred before the grain was ripe and much of it was injured. It is estimated that more than one-half of the wheat grown is fit for milling, the remainder is being used for the fattening of swine and cattle. A largely increased area of land has been brought under the plough and will be ready for crop in 1908.

BRITISH COLUMBIA.

In this province also the spring was late and on some parts of the coast the climate unusually wet and cold. Warmer weather followed which hastened the ripening of the grain, and crops were fully up to the average. The hay was a heavy crop and was well saved.

The growing of fruit in this province is extending rapidly, especially in the drier interior districts. Extensive orchards are being planted in many directions, and the quantities of fruit available for export will soon be very large. The bearing orchards in many parts of this province gave in 1907 satisfactory returns.

HEALTH OF ANIMALS BRANCH.

The work of development and organization in this branch has continued during the past year.

A quarantine station has been established at White Horse, Y.T., while the following places on the international boundary have been declared to be inspection stations: Noyan Junction, Quebec; Morrisburg and Kingston, Ontario; and Chopaka and Huntingdon, British Columbia.

New quarantine buildings have been completed at Lennoxville, Que., at Gretna and Bannerman, Man., and Kingsgate, B.C., while at Emerson, Man., North Portal, Wood Mountain and Willow Creek, Sask., Pendant d'Oreille, Coutts and Twin Lakes, Alta., and Osoyoos, B.C., existing facilities have been considerably improved. At the present time a new quarantine station is being erected at Sarnia Tunnel, the old premises at Pt. Edward being, since the building of the tunnel, inconveniently situated and altogether too large for the requirements of the service. The new buildings in course of erection are being constructed with material from those on the old grounds, which, having been built many years ago, are scarcely fit for use and could not be placed in proper repair without considerable expenditure, which, under the circumstances, it was not deemed advisable to undertake.

The introduction in March, 1907, of new regulations providing that all horses imported from the United States must be tested with mallein, has largely increased the work of inspectors at boundary points. It is, however, gratifying to be able to report that this important change has caused less irritation than was anticipated and that its results are undoubtedly of great value in preventing the introduction of diseased animals.

No serious changes have been made in the quarantine regulations since the date of my last report, except that the permit system has been extended to cover importations of animals from all parts of the world with the exception of horses brought from any of the countries of Europe. A slight change has also been made in the regulations governing the admission of animals on inspection for exhibition or other temporary stay, it having been found advisable to prohibit entirely the introduction of swine for any purpose whatever without undergoing the prescribed period of quarantine.

The work done by our officers at quarantine and inspection stations shows a marked improvement, with the result that the departmental check on importations of live stock is much more effective than formerly, and our statistics, in a corresponding degree, more reliable.

This is the more gratifying because of the continued large influx to western Canada of American settlers, most of whom bring live stock with them, the consequent pressure, especially at certain ports, entailing a vast amount of work on the inspectors stationed there.

Hog cholera is still being kept under control in a satisfactory manner, and although the year just past shows a slight increase in the amount of compensation paid, this is due almost entirely to new outbreaks apparently caused by animals surreptitiously introduced from the United States. A few very limited outbreaks have occurred in the old affected area, due evidently to chronic cases infected during previous outbreaks, and in which the disease had in the meanwhile assumed a latent form. The disease has not made its appearance except in Ontario and British Columbia, although a number of suspected cases have been reported and investigated by our officers.

The experimental work carried on at Antigonish, N.S., with the view of ascertaining firstly, the cause of the affection locally known as Pictou cattle disease, which was found to be due to the ingestion of rag-wort or Senecio Jacobea, and secondly, whether sheep can eat that plant with impunity, have been brought to a close. It has now been shown beyond question that no bad effects follow the eating of this plant by sheep and steps are therefore being taken to freely disseminate this information throughout those localities in which the disease is found, and in which the rag-wort grows in profusion. A strong public sentiment against the weed is being created, and as sheep are probably the most satisfactory agents for its eradication, especially in rough lands where cultivation is difficult or impossible, I am giving special attention to the development of the sheep industry in these districts.

The unusually severe winter of 1906-07 which led to the drifting for great distances of range cattle, many of which were affected by mange, caused a very serious spread of that disease and consequent heavy financial loss. A strong effort was, however, made during the summer to regain the advantage lost and at the close of the season the number of infected cattle had been greatly reduced. Unfortunately, however, the results of treatment were not as satisfactory as they might have been, owing to the fact that the use of oil emulsion was permitted. Although this form of treatment has been highly spoken of and recommended in different countries, it was found by my officers to be far less efficacious than the lime and sulphur dip, the use of which

only, was authorized in former years. As the result of this experience, the oil emulsion is no longer recognized as an official dip. All herds found to be affected after the weather became too cold for treatment have been held in quarantine and will be dealt with in a satisfactory manner before they are released.

In the light of our past experience it will be necessary to keep all the cattle in the infected area under much closer supervision than has hitherto been attempted, with the view of enforcing thorough treatment on the first appearance of the disease in a new locality.

During the summer and fall sheep scab was occasionally reported from a few districts in western Ontario. A systematic and thorough investigation was made in each case with results, so far, apparently very satisfactory, although owing to the insidious nature of the disease, it is impossible to state positively that it has been eradicated. The sheep trade, however, is being closely watched and the attention of breeders and dealers having been drawn to the importance of promptly reporting any suspected outbreaks, it is scarcely likely that it will now be permitted to spread to any serious extent before being detected and dealt with. In this connection I am glad to be able to report that it was last fall found possible to permit the movement of sheep without inspection from all parts of the Dominon, with the exception of a comparatively small area in western Ontario, which is, however, rather important owing to the large number of sheep bred and reared there.

Gratifying results are being obtained from the policy of slaughter and compensation adopted some years ago in dealing with outbreaks of glanders. The expenditure under this head, which was exceedingly heavy during the first year of the new policy. has shown an annual decrease, and as under the present quarantine regulations the introduction of fresh infection from the United States is likely to be largely, if not altogether prevented, I hope to be able in the course of a few years to report that the disease has been practically stamped out. The task is, however, far from an easy one. especially in the western provinces, where for many years glanders was allowed to spread practically unchecked. A marked advantage under the new policy is the general willingness of owners to report suspected cases due to certainty of obtaining reasonable compensation in the event of their animals being destroyed.

I am pleased to be able to say that during the year just past the British Board of Agriculture has adopted a policy involving the slaughter of reacting horses similar to that which this country was the first to adopt in 1904. There is every reason to believe that a number of other countries will shortly be forced to adopt similar measures.

Bovine tuberculosis continues to exist to a greater or less extent in a number of different localities throughout the Dominion, and several times during the past year I have been asked to adopt a more aggressive policy in dealing with this disease than that now followed by the officers of my department.

The question of the control of bovine tuberculosis is, however, one of great difficulty, and until some method of dealing with it, more intelligent and satisfactory than any of those hitherto tried, is evolved either by those now engaged in experimenting with the disease or possibly by their successors, I do not think it advisable to adopt the extreme measures so strongly advocated in some quarters. The position of those

members of the medical profession who without perhaps realizing the extent of their demands, ask for the universal testing of all cattle and the slaughter of such as react, would be greatly strengthened, if they themselves were to insist on the notification of ordinary cases of human tuberculosis. As long as the latter are allowed to mix freely with their fellow men and women, to occupy the same rooms, travel in public conveyances and act generally as infective agents, it is scarcely reasonable to attach so much importance to the comparatively insignificant part played by the domestic cow in the transmission of this fatal disease. Until some method involving a less serious economic loss than that inseparable from a policy of compulsory testing and slaughter, is discovered I do not think that much more can be done than we are at present doing.

Preventive inoculation for tuberculosis does not appear to be making many converts among practical veterinarians, but experimental work in this direction is still in progress, and it is possible that along this particular line, an effective method of dealing with the disease may yet be discovered.

The herd of tuberculous cattle which has been kept in the open air since December, 1905, still continues to flourish and has been the means of furnishing us with much valuable information which will be placed in the hands of the public at the earliest possible moment after the conclusion of the experiments.

Maladie due coit, or dourine, which for some years back has existed in southern Alberta, to which district it was introduced by animals imported from the United States, has been during the past year kept under control to a fairly satisfactory degree, although it has not yet been entirely eradicated. Experimental work on this disease has been continued by my pathologists at Lethbridge and Ottawa. The efforts of these gentlemen since the discovery in February, 1907, of the specific trypanosoma causing the disease have been and are now being directed towards the discovery if possible of methods of exact diagnosis and prophylactic treatment. Horse owners are becoming alive to the importance of promptly reporting all suspected cases, and I hope shortly to be in a position to state that the disease has been entirely stamped out.

A number of outbreaks of anthrax have as usual taken place during the year, although I am pleased to say that this disease has not been as prevalent as during many previous seasons. Stock owners are now generally adopting a policy of preventive inoculation, which appears to furnish a satisfactory means of dealing with the disease on premises which have unfortunately become infected. Evidence has from time to time been afforded that many of these apparently mysterious outbreaks of anthrax are really due to infection from imported wools and hides. My officers are now engaged in securing definite information on this point which may render advisable the adoption of preventive measures.

The biological laboratory continues to do work of great value to the stock owners of the Dominion. Large numbers of pathological specimens continue to be sent in for examination and diagnosis. The output of the preventive vaccines for anthrax, and especially for black quarter, continues to increase enormously, while the manufacture of the mallein and tuberculin used by my officers forms no small part of the work of the pathological staff at headquarters. A small branch laboratory has been estab-

lished in British Columbia, where the services of an able and experienced veterinary pathologist are being utilized in making an investigation as to the nature and causes of a disease known in that province as Red Water in cattle.

The passage of the Meat and Canned Foods Act during the session of last year rendered it necessary to provide the services of a considerable number of veterinarians specially trained in the work of meat inspection. Arrangements having been made through the Veterinary Director General a short course in meat inspection was arranged for in Chicago during March and April, 1907. As a result of this step. there were rendered available the services of a sufficient number of men to enable me to bring the Act into force on September 3, since which time all establishments packing or dealing in meat for export or interprovincial trade have been under close and systematic inspection. The results have been to all appearances eminently satisfactory, and although the number of animals condemned is, compared with some other countries, gratifyingly small, it is still large enough to show that the placing of this trade under government supervision was both necessary and advisable. I would add that the packers have with few exceptions, loyally accepted the situation and are according to the department a hearty and cordial support in its endeavours to place the meat trade in Canada on a plane entirely above the possibility of suspicion.

ARCHIVES BRANCH.

During the last fiscal year three members of the staff have been employed in making a survey of historical material in Ontario, Quebec and the maritime provinces.

In the province of Ontario, Mr. Robert Laidlaw has examined and reported on the following collections:—

Toronto Pubic Library.—About 400 volumes, including papers of D. W. Smith. W. Dummer Powell, Jarvis, Baldwin, Strachan, Scadding, Lord Selkirk, Bidwell and others.

Crown Land Department.—The land registers and records of original grants.

Department of Agriculture.—Record books from 1783-1808.

Canadian Military Institute.—Military records, bearing on the war of 1812-15.

Knox College.—Church records and letters from pioneer missionaries in Canada.

Victoria College.—Journals of Methodist conferences, and correspondence dating back to 1775.

Ontario Historical Society.—Original document and copies of old church registers.

In private hands.—Correspondence of Sir John A. Macdonald from 1847. Papers of the late William Kirby.

HAMILTON.

Miscellaneous documents of local character; muster rolls, 1812; diaries, &c., in private hands.

ST. CATHARINES.

In the possession of Miss Merritt.—Papers of the late William Hamilton Merritt and of his father. The war of 1812-15 and the building of the Welland canal figure largely in these, and the Francis Goring papers commencing in 1776.

The property of Mrs. J. G. Currie.—Letters (principally copies) bearing on the life of Laura Secord.

PORT DALHOUSIE.

In the possession of W. B. Clark.—Memoirs of Col. John Clark, written by himself, and dealing chiefly with the war of 1812-15 and the rebellion of 1837-38.

NIAGARA-ON-THE-LAKE.

Niagara Historical Society (Miss Janet Carnochan, secretary and curator).—A large collection of documents and relics of historical interest.

SIMCOE.

Norfolk Historical Society (Henry Johnson, curator).—Walsh family papers and other manuscripts, dating back to 1793.

Tisdale and Read.—Old minute books, 1800-1809.

ST. THOMAS.

James H. Coyne.—Talbot papers, 1801-1851. These belong to His Honour Judge Macbeth, of London, but are in Mr. Coyne's custody.

His Honour Judge Ermatinger.—Diaries kept by Edward Ermatinger while in the service of the Hudson's Bay Company, 1818-29; also letters, &c.

His Honour Judge Hughes.—Printed papers and documents.

LONDON.

Sheriff Cameron.—Military Records and old letter books.

Fred. W. Farncombe.—Field notes of surveys by Colonel L. Burwell, 1819-21.

London Historical Society (Dr. L. Woolverton, curator).—Papers by pioneers on the history of the city of London and the county of Middlesex.

Dr. Linus Woolverton.—Diary and letter book of Joseph Willcocks, 1800-1803.

Chas. J. N. Shanly.—Original manuscript of diary kept by Major E. B. Littlehales, aide-de-camp to Lieut. Governor Simcoe, of a trip from Niagara to Detroit, 1793.

DETROIT.

Chas. M. Burton.—A collection of over 700 volumes of original manuscripts, bearing chiefly on the early history of the country on both sides of the Detroit river between Lake St. Clair and Lake Erie. Many of the documents deal with matters of much interest to Canadians.

WOODSTOCK.

Mrs. J. M. Ingersoll.—Original manuscripts, including military commissions, land grants and list of settlers in Oxford in 1787 on lands granted to the Ingersoll family in 1783.

F. R. Ball, K.C.—Manuscripts, including military commissions and documents signed by Colonel Butler, of the Butler Rangers.

BRANTFORD.

Mohawk Institute (Rev. Robert Ashton, principal).—Registers of Indian baptisms, marriages, &c., beginning with 1827.

Miss Augusta I. G. Gilkison.—Captain William Gilkison papers, consisting of diaries, correspondence, &c., dating back to 1800.

WINDSOR.

John Davis.—Business papers, correspondence, &c., of Angus McIntosh, Hudson's Bay Company factor at Moy (now Windsor) beginning about 1768; also military records.

Windsor Armouries.—Military papers, 1812

WALKERVILLE.

Alex. H. Askin (Strabane).—Seven or eight thousand original manuscripts and printed documents covering a period from 1780 to 1830. These deal chiefly with commercial and military matters, although all phases of life are touched upon.

SANDWICH.

Church of L'Assomption.—Complete parish records of births, marriages and deaths. from 1760; also business records of the parish from 1756, and other documents of interest.

Albert Prince.—Papers of the late Colonel Prince.

Fred. Neal.—Collection of historical data concerning the pioneer families of Sandwich and that part of the county of Essex which adjoins.

AMHERSTBURG.

Capt. Wm. Caldwell.—Original manuscripts, including letters written by Captain Billy Caldwell, Chief of the Pottawatomies, General Procter and others.

STRATFORD.

J. Davis Barnett.—In this gentleman's library of over 26,000 volumes are many rare Canadiana.

ELORA.

John R. Connon.—Original manuscripts and copies of documents bearing on the early history of the village and the adjoining townships of Woolwich, Pilkington and Nichol.

Henry Wissler (Salem).—Papers connected with the settlement of part of the county of Waterloo by the German Land Company.

COLLINGWOOD.

The Huron Institute (D. Williams, secretary and curator).—Collection of documents of historical interest, chiefly of a local character.

PEFFERLAW.

W. H. Johnston.—Diaries kept by Captain William Johnston, beginning 1819.

ORILLIA.

Hale Brothers, publishers of 'The Packet.'—Collection of documents of local interest.

SUTTON WEST.

James Anderson.—Complete records, diaries, &c., kept by James Anderson (a) in command of an overland expedition sent from Great Slave Lake by the Hudson's Bay Company, under instructions from the British Government, in 1854, to follow up clues already obtained as to the fate of Sir John Franklin and his party. Autograph letters of Lady Franklin. Journals and diaries of trips through the Northwest Territories while in the service of the Hudson's Bay Company.

PETERBOROUGH.

Peterborough Historical Society.—Hon. Peter Robinson papers, consisting of lists of early settlers in that district, their location, &c.

BELLEVILLE.

Lieut.-Colonel Ponton.—Original manuscripts printed documents, and copies of the first newspapers published in the county of Hastings.

Dr. Yeomans.—Ketcheson family paper, military records 1812-1841.

KINGSTON.

Queen's College.—Letter book, Richard Cartwright, 1799-1815; Treadwell papers: military records; register of baptisms and marriages kept by Rev. Robt. McDowell. beginning 1800; pamphlets and newspapers of early date.

GANANOQUE.

Charles McDonald.—Joel Stone and John McDonald papers, from 1783, covering a long period.

Miss Colton.—Papers, mostly of a business character, left by R. P. Colton.

BROCKVILLE.

His Honour Judge McDonald.—Original register of births, marriages and deaths kept by Rev. Wm. Smart, 1812-1838; letters of Wm. Lyon Mackenzie; historical sketch of Stone and McDonald families.

W. S. Buell.—Orderly book, 1781-82; letters of Ogle R. Gowan; documents *re* building of steamer William IV. at Gananoque, 1830-34.

H. N. Gardiner.—Muster rolls, Leeds militia, 1825.

'Recorder' Printing Co.—Files of 'Recorder' newspapers from 1820.

James Bissell.—Minute book of Methodist circuit.

O. K. Fraser.—Court registers and records beginning 1789; register of marriages. Johnstown district, 1801-50.

Wm. Richardson (county clerk, Leeds and Grenville).—Hon. Charles Jones papers, dating back to 1793, and consisting of military records, letters of Rev. John Strachan, Ogle R. Gowan, Sir Allan Macnab and other prominent men, old maps and plans, &c. This collection, which was found in the court house at Brockville, is now in the Dominion Archives, having been donated by the counties council of Leeds and Grenville.

W. J. Wright.—Letters written by Wm. Lyon Mackenzie.

SMITH'S FALLS.

James H. Ross.—Record books of Rideau Methodist circuit, 1819-74; record of baptisms, 1825-43.

PERTH.

Mrs. Frank Davis.—Colonel Alex. McMillan papers, relating chiefly to the military settlement at Perth. These have been handed over to the Dominion Archives by Mrs. Davis.

John Hart.—Account and letter books of Perth Military district.

Robert J. Drummond.—Manuscript volume by Andrew Drummond, giving a history of the construction of the Rideau canal, with maps, and plans of the work.

PRESCOTT.

Edward Jessup.—Jessup papers, dealing almost entirely with military matters. 1780-1800. David Parish papers, letters to Parish, who was a resident of Ogdensburg, N.Y., 1813-15.

Rev. H. B. Patton.—District and general orders, issued at Kingston, Montreal, Fort Erie, and Niagara Falls, 1812-14.

MORRISBURG.

Miss Colquhoun.—District and regimental orderly books, 1838-39.

CORNWALL.

James Dingwall.—Records of Court of General Session for District of Lunenburg, beginning 1789; old marriage registers, &c.

R. A. Pringle, M.P.—Orderly books, 1779-80, and other interesting papers.

JASPER.

Elliott Ballantyne.—District of Johnstown records, and copies of old newspapers.

LANCASTER.

Miss Macdonald.—Diaries kept by Rev. Father John Macdonald, 1815 to 1875, also correspondence covering about the same period.

ALEXANDRIA.

J. A. Macdonell, K.C.—Military records, 1812-13; colours Royal Canadian Regiment, 1794; correspondence from Sir John A. Macdonald.

E. C. Tiffany.—Files of early Canadian newspapers.—These are now in the Dominion Archives.

A. G. F. Macdonald.—Hon. D. A. Macdonald papers—commercial and political.

WILLIAMSTOWN.

G. H. McGillivray.—Register kept by Rev. John Bethune, 1779-1815; orderly books and other documents.

ST. RAPHAELS.

Rev. Father Campbell.—Parish registers beginning 1797.

L'ORIGINAL.

John Higginson.—Papers relating to the seigneury of Longueuil.

ALMONTE.

Andrew Bell, C.E.—Books and documents of early date.

ARNPRIOR.

Gerald Jarvis.—Papers and correspondence of the late Chief Justice Jarvis, of Prince Edward Island, 1806-1850.

RENFREW.

C. E. Smallfield.—Local historical records.

RICHMOND HILL.

E. Teefy.—Collection of early newspapers.

MARITIME PROVINCES.

Dr. James Hannay, of Fredericton, who has been working the Archives Branch in the lower provinces, reports that he has examined the principal collections of papers in the following places:—

New Brunswick.—Dalhousie, Campbelltown, Bathurst, Newcastle, Chatham, Richibucto, Dorchester, Hopewell Cape, Hampton, St. John, St. Andrews, Georgetown. Fredericton, Woodstock, Andover, Edmundston.

Nova Scotia.—Digby, Weymouth, Annapolis, Bridgetown, Kentville, Windsor. Yarmouth, Shelburne, Liverpool, Chester, Lunenburg, Bridgewater, Halifax, Amherst. Parrsboro, Truro, Pictou, Antigonish, Guysboro, Sydney, Port Hood, Arichat, Baddeck.

Prince Edward Island.—Summerside, Charlottetown.

In many instances, detailed summaries have been prepared by Dr. Hannay and sent to the Archives. These are available to the student. The books of the registrars of deeds have been examined carefully, and a note has been made of the period covered by each. A fairly complete list has been obtained of the records of births, marriages and deaths. A catalogue of the records of the executive council of Prince Edward Island, the land papers and other records, is now deposited in the Archives Branch.

At Sydney, the Dodd's papers were communicated to Dr. Hannay. At Halifax he examined and catalogued the Aikin and Stewart papers.

In August, 1907, Dr. Hannay was instructed to visit Manitoba, Alberta, Saskatchewan and British Columbia. In the course of his investigations he examined the records in Winnipeg, Selkirk, Portage la Prairie, Brandon, Regina, Prince Albert. Calgary, Edmonton, Vancouver and Victoria. Many valuable records bearing upon the history of the far west have been brought to light, and when all the summaries are complete the department will be in the possession of much useful material of local and general interest.

Arrangements have been made with the province of British Columbia to furnish the Archives Branch with a memorandum of all material discovered relating to the province, so that students in other parts of the Dominion will find it to their advantage to consult the index at Ottawa.

Dr. Hannay is now engaged in examining correspondence deposited in Fredericton relating to boundary questions.

QUEBEC.

The Reverend P. M. O' Leary has continued his investigations in the province of Quebec. The transcription of records in the Archbishop's Palace is nearly complete. and copies have been made of some valuable manuscript plans in the seminary.

A catalogue has been made of a part of the collection of Colonel Neilson, and at a convenient time the work will be completed.

Collections of private papers have been examined by Father O'Leary in Montreal and other places.

THE HISTORICAL MANUSCRIPTS COMMISSION.

In order that the historical work done by the Dominion Government might be placed upon a sounder and broader basis, I thought it desirable to establish an Historical Manuscripts Commission for Canada to act in an advisory capacity.

By an order in council passed on April 17, 1907, it is set forth:—

'That the members of the said commission shall be historical scholars of recognized attainments, whom the minister may deem it advisable to invite to take part in the task of shaping and of executing a systematic plan for the prosecution of all those activities that are carried out under the auspices of the Archives Branch.'

The members of the commission are the Hon. the Minister of Agriculture and his deputy; Professor Adam Shortt, of Queen's University; Professor Joseph Edmond Roy, of Laval University; the Abbé Gosselin, Professor of History in Laval; Professor S. M. Wrong, Toronto University, Professor C. W. Colby, McGill University, and the Dominion Archivist.

In addition to such other duties as may be assigned to the commission by the Governor in Council, it is to examine the translation in the official reports of the branch: to consider what classes of documents should be copied or purchased; the methods to be adopted in publishing documents, and to ascertain the nature and extent of the materials for local history that exist in different parts of the Dominon.

The first meeting of the commission was held on May 10, 1907. As a point of departure, the commission thought it desirable to embody in a minute its deliberate opinion regarding the three following subjects;—

1. Tasks that are most urgently required.

2. Tasks which should be undertaken as increased facilities permit.

3. The methods to be adopted in carrying forward the work of the Archives Branch.

At subsequent meetings of the commission it was decided to make a new classification of the manuscripts; to prepare an inventory of all the documents, so as to render the collections easily accessible to students; and to publish from time to time a series of documents, summaries of papers, reports, &c., in the form of occasional bulletins.

The inventory is now in the course of preparation and will be ready for distribution, it is hoped, during next session.

THE FRENCH ARCHIVES.

During the nineteenth century four Canadians at least visited France for the purpose of making an examination of the manucripts relating to Canada to be found in the French archives. In 1852-3 Mr. G. B. Faribault looked through the War Office papers at Paris, and had copies made at the Ministère de la Marine of various documents selected from the first 56 volumes of the series C (Correspondence Générale—Canada). In 1865 the Abbé Tanguay made notes on the series GG[1] of the same collection; and in 1874 the Abbé Verreau examined both this collection and also the manu-

script at the Bibliothèque Nationale, the Ministère des Affaires Etrangères and the Archives Nationales. Before leaving France he also paid a hurried visit to Lille, Metz, Rouen, Bordeaux, Toulouse, Annecy, Chambéry, Grenoble and Marseilles.

Funds not being available to pay for having copies made of these papers, nothing further was done until 1883, in June of which year Mr. Joseph Marmette was sent to Paris to make a fresh examination of the archives in that city. At the end of the year he published a list of the papers relating to Canada to be found in the Archives Nationales, the Bibliothèque Nationale and the Ministère des Affaires Etrangères. Returning to Paris in August, 1885, Mr. Marmette spent two years in drawing up an inventory of manuscripts relating to Canada preserved at the Mazarin Library, the Library of the Institute and at the Ministère de la Marine. At the latter depository he made an analysis of the whole of series C^{11}, entitled, Corespondence Générale—Canada.

The work of copying these papers did not begin until 1891, in which year Mr. Guët, the head of the Archives Department of the Ministère des Colonies (which had meanwhile been separated from the Ministère de la Marine and transferred to the Pavillon de Flore at the Louvre), was asked to have transcripts made of the papers calendared by Mr. Marmette, who had returned to Canada in 1887. By the end of 1894 the first 30 volumes of the Correspondence Générale had been copied, and two years later 61 volumes had been sent out to Ottawa.

About this time Mr. Guët was succeeded by Mr. Victor Tautet, who had entered the Ministère des Colonies in 1895. M. Tautet, to quote Mr. Richard's report for 1899, 's'est constitué en quelque sort l'agent de notre gouvernement, dirige l'ouvrage de nos copistes, solde leurs travaux et fait tout ce qu'il peut pour faciliter la tâche que nous avons entreprise.'

In March, 1897, Mr. Edouard Richard was sent to Paris by Dr. Brymner to continue the calendaring begun by Mr. Marmette, whose death in May, 1895, had been a distinct loss to the Archives Branch. In addition to compiling an excellent description of the whole collection at the Ministère des Colonies, Mr. Richard continued the detailed summaries of the documents in this collection that relate to Canada. In his report for 1899 he gave an analysis of the seventeen volumes of the Collection Moreau Saint-Méry, of the twelve volumes of the Randot-Pontchartrain correspondence, of the six volumes of the Etat-Civil of Iles Royale and St. Jean, as well as the first 42 volumes of the Series B (letters sent). His summaries of the remaining volumes of Series B have been published since his death in the reports for 1904 and 1905.

In addition to losing in March, 1904, the eminent services of Mr. Edouard Richard, the Archives Branch was on June 9, 1907, likewise deprived of the aid of M. Victor Tautet. At that date some 270 volumes, including Series B as far as volume 23, had been copied and sent out to Ottawa.

The work in Paris remained at a standstill until the autumn of 1907, since which date some 11 volumes have been copied. Two copyists are now at work at Series B in the Colonial Office, while of the Fonds Amérique in the Ministère des Affaires Etrangères some five volumes have been copied. A copyist in also engaged in transcribing those manuscripts in the Bibliothèque Nationale that relate to Canada.

Before being sent to Ottawa each volume is carefully collated by Mr. Th. Beauchesne, of the Baie de Chaleur.

ARCHIVES WORK IN LONDON.

During the fiscal year 1907-8, the work of the Archives Branch in London has been carried on without interruption. At the Public Record Office progress has been made with the papers relating to the Maritime provinces. In addition to the instructions to the governors of these provinces to 1840, copies have been made of the Nova Scotia papers as far as 1804, those of Prince Edward Island to 1813, and those of New Brunswick to the year 1825. The logs of a number of the British warships present at Louisburg in 1745 and 1756 have also been copied. Transcripts have also been made of the papers relating to the negotiations which culminated in 1783 in the Treaty of Versailles. In this connection the thanks of the Archives Branch is expressed to Lord Lansdowne for his kindness in allowing copies to be made of the Shelbourne manuscripts in his possession.

The records of the Canadian post office which are to be found at the General Post Office in London have been copied as far as the year 1843. The death in February of this year of Mr. J. G. Hendry, the curator of the Record room at the G. P. O., has been a great loss. Fortunately Mr. Hendry had already brought to light and placed in order ready for copying the records of the Canadian post office for several more years.

The minute books of the Hudson's Bay Company have now been transcribed as far as No. 14, which embraces the fiscal year 1691-2.

I have now to refer more particularly to the work that is being done in the Archives Branch at Ottawa.

This department is divided into three main sections, viz.; 1 manuscripts; 2 maps and plans; 3 printed material.

Manuscript Section.

At the time that the branch was reorganized in 1904, we had then the following collections of manuscripts;—

A. Bouquet collection	35
B. Haldimand collection	247
C. Military	1,064
F. Official correspondence under the French régime	223
M. Correspondence of the Colonial Secretaries and miscellaneous documents	719
Q. Correspondence of the Colonial Office with the governors of Upper and Lower Canada	869
	3,157

Since that time the following collections have been added to the manuscripts already in our possession:—

Series.	Nature.	Number of Volumes.
D.	Durham papers	12
E.	Registers and documents from the Privy Council, Ottawa	1,000
Fi.	Registers and documents from the Finance Department.	24
G.	Correspondence of the governors with Downing street.	572
GS.	Correspondence of the office of the Governor-General	105
MD.	Correspondence and documents from the Militia Department	70
S.	Registers and correspondence from the State Department, Ottawa	7,841
		9,624

If we add to these new acquisitions the collections acquired since 1904, viz.:—

C.	Military papers	968
F.	French correspondence	149
M.	Miscellaneous documents	327
		1,444
	Making a total of	11,068

Therefore the number of manuscript volumes has been quadrupled since 1904. To this number may be added nine volumes of correspondence from the Indian Department dating from 1723, and 280 deeds of surrender.

It is unnecessary for me to dwell upon the value of the manuscripts now deposited in the Archives. The inventory of the collections which is now in the course of preparation will be published during the coming year, and will serve as a preliminary guide to the Archives. A general index of the printed reports of the branch since 1873 is now complete. These two publications will facilitate research while the work of a definite classification is going on.

I should call attention to the fact that in addition to the extensive collection which has been copied in England relating to the history of the Maritime provinces, we have been engaged in making research concerning the boundary fishery questions.

The documents acquired in this manner have proved of great service in the preparation of the cases which are to be submitted by the Government to arbitration. We have now, for example, original or copies:—

11 volumes relating to the Hudson's Bay.

20 volumes Selkirk documents.

11 volumes Oswald correspondence relating to boundaries and fisheries of Labrador and Maritime provinces.

And in order to facilitate the preparation of a history of the Canadian post office. 14 volumes have been copied in the General Post Office in England.

This supplementary copying in England has not interfered with regular transcription of historical documents which has been going on for years.

The removal to the Archives from different departments of documents prior to confederation, and the arrangement of these records, has entailed considerable work. although the arrangement is only temporary. The records after being examined and put in chronological order have been placed in portfolios. While a part of the staff is engaged in this work which requires close and particular attention, several members are employed in preparing a card index indicating the names of persons, subjects and localities. About 700,000 of these cards have been prepared and arranged.

A nominal index has been made for the series A, B, F and Q, and a similar index for the series C is in course of preparation. Although the arrangement of the various collections on one is not final, it permits access to the volumes with some degree of facility.

The removal of departmental records to a central office and the numerous acquisitions of the last three years have stimulated historical research in all parts of the Dominion.

The demands for information are constantly increasing and entail considerable correspondence. Men of experience only can be relied upon for this branch of inquiry. A regiseter is kept of all such investigations, and of the information supplied, so that the notes accumulated will be of service to future students.

The inquiries are not limited to questions of historical character; there are frequent applications for searches relating to lands, the origin and genealogy of families. municipal matters, and questions affecting civil rights. The land registers which have been transferred to the Archives, and those which have been copied in other provinces, facilitate the investigations of lawyers. The register of marriages, births and deaths are also frequently consulted.

The services rendered by the Archives to the cause of historical science has been recognized by specialists far beyond our own borders, and I am pleased to note that a publication under the direction of the branch has been chosen by the University of Oxford as one of the text books for examination in the school of modern history. It is evident that the liberal grant made by parliament, which has been expended with care, has produced excellent results.

Map Division.

The division contains now 4,285 plans, maps, and charts, the larger portion of which are original. During the course of the year 1,884 maps have been restored and mounted on linen. A classification has been commenced, and a general index of seven thousand cards has already been made. The cards give the full title of the map or plan, the date and name of the author. The demands for copies of maps and plans is increasing, which is proof that the public recognize the value of this division.

Printed Matter.

During the last fiscal year 1,263 new volumes have been added to this division. The volumes deal mainly with questions pertaining to our history. A record is made

of all new books published relating to Canada, and a card index is kept of all the leading articles in newspapers or reviews which have any bearing on Canadian affairs. The value of this work to the future historian or bibliographer will be incalculable.

A new feature in connection with the work of the Archives has been the collection of prints and engravings illustrating the development of Canadian life. This departure is a popular one, judging by the demands from authors for permission to copy the prints, and from the words of appreciation by the numerous visitors to the Archives.

III.—PATENTS OF INVENTION.

The following tables show the transactions of the Patent Branch of the Department of Agriculture from April 1, 1907, to March 31, 1908:—

Applications for Patents.	Patents and Certificates Granted.			Caveats.	Assignment of Patents.	Notices under Section 8.
	Patents.	Certificates.	Total.			
7,406	6,774	744	7,518	317	2,900	607

Detailed Statement, Patent Office Fees.

Patents.	Assignments.	Caveats.	Copies.	Subscriptions to Patent Record.	Notices to apply for Patent.	Sundries.	Total.
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
166,030 53	6,330 18	1,675 00	1,887 72	516 52	1,815 25	227 29	178,482 49

The Canadian patentees were distributed among the provinces of the Dominion as follows:—

Ontario.	Quebec.	Manitoba.	British Columbia.	Nova Scotia.	New Brunswick.	Saskatchewan.	Alberta.	Prince Edward Island.	Yukon.
424	178	61	52	27	25	15	25	2	0

Patents issued to residents of Canada, with the ratio of population to each patent granted:—

Provinces.	Patents.	One to every
British Columbia	52	4,996
Ontario	424	5,252
Manitoba	61	6,442
Alberta	25	8,936
Quebec	178	9,875
Territories and Yukon	6	11,963
Saskatchewan	15	12,689
New Brunswick	25	13,496
Nova Scotia	27	17,235
Prince Edward Island	2	50,502

Patents issued to citizens of foreign countries.

Countries.	Patents.	Countries.	Patents.
United States of America	5,030	Russia	5
Great Britain	313	Norway	13
Germany	214	Newfoundland	4
Australia	76	Japan	3
France	91	Mexico	4
New Zealand	31	India	1
Sweden	46	Cuba	3
Belgium	18	Natal	1
Austria	14	Nicaragua	1
Italy	14	Finland	5
Switzerland	13	Brazil	1
Denmark	29	Turkey	1
Transvaal	6	Russian Poland	1
Hungary	8	Holland	10
Algeria (North Africa)	1	Grand Duchy of Luxenbourg	2

Statement of the number of patents issued under the Act, on which the fees are paid for periods of six, twelve or eighteen years, at the option of the patentee; and of patents on which the certificates of payments of fees were attached after the issue of patents originally granted for periods of six and twelve years.

Period for which Fees were paid on First Issue.			Patents on which Certificates were attached after issue.		Re issues.
6 years.	12 years.	18 years.	6 years.	12 years.	
6,750	8	16	724	20	12

The total revenue for the year ended March 31, 1908, was $178,482.49, exceeding the receipts in all previous years, and resulting in an increase of $8,933.71 over the same period in the preceding year, thus averaging a monthly increase of $744.48.

The total number of reports issued by the examiners during the year was 10,111. and twelve patents were surrendered and reissued.

Out of the total number of patents granted by this office during the year, there were 5,030 issued to inventors, or their assignees, resident in the United States, being seventy-four per centum of the whole issue.

This branch of my department receives regularly the official reports of patents from Great Britain, Australia, United States, Mexico and Japan, in exchange for the Canadian Patent Office Record.

The number of new applications for patents presented during the year was 7,406. being an increase of 329 over the previous year, and an increase of 653 in the number of patents granted.

The number of notices filed under authority of section 8 of the Patent Act was 607, yielding a revenue of $1,815.25

The attention of applicants for patents should be directed to the necessity for the greatest care in the preparation of their applications, a work which is generally advantageously performed by patent solicitors not only in Canada, but in other countries where patent laws are in active operation.

The utmost care and diligence have been observed by the Patent Office in scrutinizing all applications for patents, and in cases where the alleged invention possessed none of the requisites of a patent, under the provisions of the Patent Act, the applications were refused.

Patentees under the instalment plan who have paid fees for one or more partial terms of their patents not infrequently postpone payment of the further fees required to keep their patents in force until after the date within which they are payable; consequently, the patents expire and it is not in the power of the office to revive them. A revival can only be secured by a private Act of Parliament, the obtaining of which entails considerable expense to the patentee. The attention of patentees is therefore called to the necessity of making their payments in time.

In dealing with petitions for extensions of time to manufacture or import under sections 38 and 39, the law is applied according to its strict and literal meaning, and the petitions are granted only when the petitioner has clearly established, to the satisfaction of the office, by affidavit or solemn declaration that the failure to manufacture or import is due to no fault of his, but to reasons beyond his control. Although a large number of these petitions were presented during the past year, it was seldom that such a case was made out as to warrant the granting of the desired extension.

The requirements of the law in regard to manufacture have been kept in mind when considering applications from patentees or their assignees to have their patents brought under the conditions of section 44 of the Act. (Compulsory License system.) The applications which have been granted are those relating to patents for inventions such as the following:—

Certain patents for an art or process; certain patents for improvements on a patented invention when both patents are not held by the same person; patents for certain appliances or apparatus used in connection with railways, telegraph, telephone

and lighting systems, and other works usually under the control of public or large private corporations, and which appliances or apparatus cannot be installed or constructed without the consent of such corporations; and certain patents for inventions which are manufactured or constructed only to order and are not, according to custom, carried in stock.

IV.—COPYRIGHTS, TRADE MARKS, INDUSTRIAL DESIGNS AND TIMBER MARKS.

STATEMENT of Fees received by the Copyright and Trade Mark Branch from April 1, 1907, to March 31, 1908.

Months.	Trade Marks.	Copyrights.	Designs.	Timber Marks.	Assignments.	Copies.	Totals.
1907.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
April	3,101 00	197 50	75 75	6 00	37 00	34 75	3,452 00
May	2,218 00	133 50	76 00	2 00	10 00	21 25	2,460 75
June	2,490 65	101 25	25 00	4 00	9 00	18 15	2,648 05
July	2,320 00	121 00	165 00	4 00	17 00	26 25	2,653 85
August	2,353 09	113 50	30 00	4 00	28 00	6 50	2,535 09
September	1,999 41	115 00	25 00	6 00	19 00	17 25	2,181 66
October	2,926 50	91 00	59 00	8 00	24 00	58 75	3,167 25
November	1,560 50	139 00	35 00	12 00	38 00	67 00	1,851 50
December	1,646 00	136 50	299 00	66 00	22 00	17 25	2,186 75
1908.							
January	1,602 75	102 50	45 00	11 00	38 00	21 75	1,821 00
February	2,060 65	112 25	153 75	6 00	18 00	28 00	2,378 65
March	2,516 64	95 00	57 00	11 00	28 50	28 60	2,736 74
Totals	26,795 19	1,458 60	1,045 50	140 00	288 50	345 50	30,073 29

The particulars of the registrations made by the Trade Mark and Copyright Branch of the Department of Agriculture during the year ended March 31, 1908, are as follows:—

I. Copyrights—		
Full copyrights without certificates	1,000	
Full copyrights with certificates	151	
Temporary copyrights without certificates	14	
Temporary copyrights with certificates	3	
Interim copyrights without certificates	51	
Interim copyrights with certificates	21	
		1,240
II. Trade Marks		848
Renewals of specific trade marks		17
III. Industrial designs		182
Renewals		10
IV. Timber Marks		33
V. Assignments		136
Total registrations		2,466

The following table shows a comparative statement of the business of this branch from 1897 to 1907, inclusive:—

Year.	Letters Received.	Letters Sent.	Copyrights Registered.	Certificates of Copyrights.	Trade Marks Registered.	Industrial Designs Registered.	Timber Marks Registered.	Assignments Registered.	Fees Received.
									$ cts.
1897	2,606	3,548	756	273	446	75	13	94	14,101 93
1898	2,576	3,453	734	275	423	136	15	114	13,535 17
1899	2,487	2,910	702	237	430	112	5	117	14,161 28
1900	2,679	3,213	893	247	447	126	22	136	14,782 53
1901	2,605	3,211	888	249	521	146	24	183	16,823 26
1902	2,687	3,257	900	196	528	164	26	222	17,703 09
1903	2,687	3,211	900	176	557	88	23	272	18,086 25
1904	2,858	3,293	1,106	228	621	107	25	118	20,647 30
1905	3,367	3,902	1,130	189	661	139	22	154	23,706 77
1906	5,340	5,193	1,228	169	1,119	125	47	282	33,107 13
1907	4,475	4,353	1,240	175	848	182	33	136	30,073 29

V.—PUBLIC HEALTH AND QUARANTINE.

The most noteworthy event within this year has been the breaking out of the bubonic plague in the United States of America.

There have been cases of this disease in San Francisco, Emeryville, Point Richmond and Oakland in California, and in Seattle on Puget Sound, State of Washington.

After one recognized case in May the disease made its appearance in San Francisco in August, and thence spread to the other places in California above mentioned.

In San Francisco there have been 121 cases of plague verified bacteriologically, and 77 deaths. Many rats infected with the disease have been also found.

In Seattle the bubonic plague appeared in October; 6 cases occurred with 6 deaths: 5 whites and one Asiatic. The rats in Seattle also gave proof of infection. The last plague-infected rats were found on the 26th and 30th instant.

Immediately upon the outbreak of this disease in Seattle I sent my Director-General of Public Heath there to study the situation. Special medical inspections were established at Victoria, Vancouver, Blaine, Huntingdon, Grand Forks, Northport (for Rossland and Nelson), and Kingsgate, with guards at Rykert's and Gateway. Special precautions were taken and are still being enforced to prevent the importation of rats by sea or land from infected ports and places.

As there have not been any further cases of plague reported from Seattle since October 31, I am to-day raising the frontier and port special passenger inspection for plague, but the precautions against the importations of rats are to remain in force.

The bubonic plague has been present during the year in Africa, Arabia, Australia, Brazil, Cape Colony, Chile, China, Ecuador, Egypt, Great Britain (Glasgow), Hawaii, India, Japan, Mauritius, Peru, the Straits Settements and Trinidad.

Cholera has prevailed in Arabia, Ceylon, China, India, Japan, Korea, Philippine Islands, Russia, Straits Settlements, and Turkey.

Smallpox has again this year been world-wide in its prevalence. Cases of this disease have come from both the Orient and from Europe to my several stations, but they have been stamped out there, and the infection not permitted to pass inland.

The reappearance of this disease in epidemic form in the State of Minnesota caused me to appoint temporary medical inspectors along the frontier north of that state. Such inspectors have been appointed and are now at work at Fort Frances, Emo and Rainy River, in Ontario, and at Sprague, Emerson, Gretna, Morden, Crystal City, Killarney, Boissevain, Deloraine and Waskada in Manitoba.

The administration of leprosy has been carried out by me throughout the Dominion.

Circulars of warning and instruction in public health matters have been sent to my coast and frontier public health officers, from time to time as occasion demanded.

The diseases which have been brought to my maritime quarantine stations during the year and stamped out there are : Smallpox, beriberi, diphtheria, scarlet fever, enteric fever, measles and chicken-pox.

The port of Prince Rupert has been selected by the Grand Trunk Pacific Railway Company for their Pacific terminal point. Although passenger travel through this port is not to be expected for several years, yet with the beginning of the building of the Pacific section of the road, supplies, materials, and men must come to the port, so that a merchant marine quarantine will be at once required; this to be elaborated into a passenger quarantine station later on. In view of these facts, I sent my Director-General of Public Health to inspect and report upon the quarantine facilities and requirements of Prince Rupert.

VI.—CENSUS AND STATISTICS.

The final report of the census of Manitoba, Saskatchewan and Alberta, taken in the summer of 1906, has been published during the year. The report contains 12 tables of population and 15 tables of agriculture. The tables of population give statistics by sex, age, conjugal condition, birthplace and immigration for the census years 1906 and 1901. The tables of agriculture show the number of horses, horned cattle, sheep and lambs and swine, the area of yield of field crops and the number of farms. Summaries of the most important of these tables were given in last year's report. Early in 1907 circular letters and schedules were sent to specially selected correspondents in each district of the Northwest provinces asking for the actual aver-

age yield for his own farm and his estimate of the average yield for the township in which he resided. These returns have formed the basis for the estimate of the yield of the harvest of 1906, which is included in the report, and it is believed that the results are substantially correct. The comparative yield of field crops in the three provinces in 1900, 1905 and 1906 is as follows:—

Kinds of Crops.	1900	1905	1906
N. W. Provinces.			
Fall wheat			
On fallow land ..... bush.	–	240,732	384,998
On other land ..... "	20,505	869,335	1,840,283
Spring wheat			
On fallow land ..... "	–	24,921,710	29,428,632
On other land ..... "	23,436,354	56,429,850	78,932,911
Oats ..... "	16,653,681	68,810,855	110,569,628
Barley ..... "	3,141,121	10,971,775	18,684.609
Rye ..... "	37,217	163,599	323,904
Flax ..... "	85,011	608,242	1,818,780
Potatoes ..... "	3,155,391	5,569,613	9,489,081
Other field roots ..... "	464,042	710,356	2,081,932
Sugar beets ..... ton	–	19,907	32,075
Forage crops ..... "	90,852	105,828	123,022
Sown hay ..... "	–	174,689	359,701
Prairie hay ..... "	904,481	2,630,313	–

The Canada Year Book, 1906, being the second volume of the second series of the Year Book, has been published. The statistics have been brought down to the end of the fiscal year, 1906, and a number of new tables have been added. The principal additions are the census of manufactures for the Dominion taken in 1906, and the census of population and agriculture for the Northwest Provinces, taken in the same year. The tables of the Year Book for 1907 have been compiled and the book is now in the hands of the printer.

The report of criminal statistics for 1905 was issued early in the year, and the report for 1906 is now in press.

In 1906 a census of manufactures was taken through the medium of the Post Office, for the calendar year 1905, and the statistics published in Bulletin II. The schedules were mailed to every manufacturer in Canada, and in nearly every instance the information asked for was willingly supplied and the results show the rapid development of our manufacturing industries.

In the census of 1901 returns were collected only from establishments employing five hands and over, but in the census of 1906 all manufacturing establishments were included. Therefore in preparing comparative tables for the two census years statistics of establishments employing less than five hands in 1905 were excluded. The total number of establishments in 1905 was 15,796, while the number with five employees and over was 12,547. The following table gives the principal statistics of the Dominion for establishments employing five hands and over in 1900 and 1905:—

	1905.	1900.	Increase.
Establishments	12,547	14,650	2,103*
Employees	383,920	339,173	44,747
Capital	$833,916,155	446,916,487	386,999,668
Salaries and wages	162,155,578	113,249,350	48,906,228
Value of products	706,446,578	481,053,375	225,393,203

* Decrease.

The apparent decrease in the number of establishments is due chiefly to the fact that in 1905 in certain large establishments where several kinds of articles were manufactured all the returns of an establishment have been embraced under the head of the principal kind, whereas in 1900 separate returns were given for each kind. Another reason is the tendency towards the merging of several small establishments into one large concern. The table given below shows the principal statistics in 1905 for all establishments:—

Establishments	15,796
Employees	392,530
Capital	$846,585,023
Salaries and wages	165,100,011
Value of products	718,352,603

The following comparative table shows that the value of products in every group of industries, with the single exception of shipbuilding, has very largely increased:—

Groups of Industries.	1900.	1905.	Increase.
	$	$	$
Food products	125,202,620	172,017,002	46,814,382
Textiles	67,724,839	84,370,099	16,645,260
Iron and steel products	34,878,402	52,587,051	17,708,649
Timber and lumber, etc	80,341,204	109,500,970	29,159,766
Leather and its finished products	34,720,513	41,201,872	6,481,359
Paper and printing	20,653,028	32,773,880	12,120,852
Liquors and beverages	9,191,700	13,928,701	4,737,001
Chemicals and allied products	11,437,300	15,290,822	3,853,522
Clay, glass and stone products	7,318,582	13,558,921	6,240,339
Metals and metal products*	19,561,261	50,067,669	30,507,408
Tobacco and its manufactures	11,802,112	15,189,720	3,387,608
Vehicles for land transportation	19,971,605	36,911,124	16,939,519
Vessels for water transportation	2,013,668	1,892,253	151,415†
Hand trades	599,329	1,433,753	834,424
Miscellaneous	35,607,212	65,721,741	30,114,529
Totals	481,053,375	706,446,578	225,393,203

* Other than steel. † Decrease.

Statistics of field crops and live stock for the provinces of Ontario, Quebec, New Brunswick, Nova Scotia and Prince Edward Island have this year been collected through correspondence with the farmers of those provinces, and the results are published in Bulletins III., IV. and V. It is not necessary to deal with Bulletins III. and IV. (field crops and live stock of the Maritime provinces and Ontario), as the statistics are given in more detail and with additional data in Bulletin V.

Bulletin V. is the final report of the census of agriculture for Ontario, Quebec, and the Maritime provinces, 1907. In Ontario the census was undertaken jointly by the Census and Statistics Office and the Ontario Bureau of Industries, the schedules being distributed and received through the post office by the former office and the returns being compiled by the latter. For the other provinces the work was done entirely by the Census and Statistics Office. The tables of this bulletin show by provinces and counties for 1907 and 1901 acreage of farm land cleared, in all crops and

in orchard and garden; acreage and yield of field crops and areas of field crops per 100 acres of occupied farm land, and the number of live stock by counties in 1907 and by provinces in 1901, together with the number of live stock per 100 acres of occupied land. In the six years 1901-1907, there was an increase of farm land cleared of 900,429 acres in Ontario, 1,092,652 acres in Quebec, 259,326 acres in New Brunswick, 590,527 acres in Nova Scotia and 35,058 acres in Prince Edward Island; the increase of land in all crops was 567,008 acres in Ontario, 556,049 acres in Quebec, 192,831 acres in New Brunswick, 163,306 acres in Nova Scotia and 56,485 acres in Prince Edward Island; while the increase in orchard and garden was 64,360 acres in Ontario, 44,084 acres in Quebec, 7,556 acres in New Brunswick, 21,193 acres in Nova Scotia and 2,957 acres in Prince Edward Island. In the comparative tables of the two census years a large decrease is noticeable in the acreage and yield of fall wheat and spring wheat in Ontario, the decrease of the former being 438,772 acres and 6,328,591 bushels, and of the latter 227,894 acres and 4,064,892 bushels. This decrease is no doubt due to the larger and cheaper production of these grains in our Northwest provinces.

In the five provinces there is an increase in acreage and yield of oats, barley, buckwheat, beans, potatoes, field roots, hay and corn for forage, an increase in acreage of corn in ear, mixed grains, and cereals, a decrease in acreage and yield of fall wheat, spring wheat, rye and pease and a decrease in yield of corn in ear and cereals.

The number of horses in the five provinces in 1907 was 1,240,171, of milch cows 2,353,456, of other cattle, 2,833,762, of sheep 2,478,688, of swine 3,006,234, and of poultry 20,565,580. Quebec shows a decrease in the number of sheep and Prince Edward Island of milch cows and sheep. The other provinces show increases in every class of live stock. Quebec leads with the largest actual increase of milch cows and is second with swine; Ontario is first with other cattle and swine, and Nova Scotia with sheep. The following table shows the increase of live stock in the six years by provinces:—

Provinces.	Horses.	Milch Cows.	Other Cattle	Sheep.	Swine.	Poultry.
Ontario	77,430	133,592	365,877	63,752	518,992	3,985,619
Quebec	68,395	141,701	76,723	-23,428*	341,452	1,413,899
New Brunswick	9,907	22,714	15,999	69,920	46,848	374,250
Nova Scotia	8,244	15,417	25,104	106,391	32,796	346,803
P. E. Island	769	-2,512*	4,988	-14,189*	7,589	154,635

* Decrease.

Statistics of butter and cheese are now being collected and compiled for the calendar year 1907, circular letters and schedules for returns having been mailed to owners or managers of all creameries and cheese factories in the Dominion.

The whole is respectfully submitted.

SYDNEY A. FISHER,
Minister of Agriculture.

PUBLIC HEALTH.

No. 1.

REPORT OF THE DIRECTOR GENERAL OF PUBLIC HEALTH.

(F. Montizambert, I.S.O., M.D.Ed., F.R.C.S.E., D.C.L.)

March 31, 1908.

Sir,—I have the honour to submit this my report as Director General of Public Health for the year ending this day.

The most important public health event during the year has been the occurrence of cases of the bubonic plague in San Francisco, and other places in the state of California, and in Seattle in the state of Washington, this last place being in close proximity to and in daily close communication with this country, at many points, maritime and frontier.

The usual threatening of this disease from the Orient, and of this and other infectious diseases from the Orient and from Europe, South America, &c., have continued since my last report.

Strict measures, ordinary and special, have, therefore, been approved by you for the sanitary protection of the country.

Circulars of warning and instruction were issued from time to time to the regular quarantine officers and to the customs officers who are also ex-officio quarantine officers at the unorganized maritime and inland ports.

As early last spring as navigation permitted I proceeded by your instruction to the St. Lawrence quarantine station, Grosse Isle, to give Mr. George Dancause, an old and recently superannuated employee, the medal of the Imperial Service Order graciously conferred upon him by His Majesty in recognition of his long and faithful services. The investiture was in accordance with my instructions carried out on the scene of his labours and before a full gathering of his former fellow employees.

In June I proceeded by your instruction to inspect the Pacific coast stations of Vancouver and William Head, Victoria. And thence I went up to Prince Rupert, the terminal point on that coast of the Grand Trunk Pacific Railway. I made a careful inspection of that place and the neighbouring harbours. My report thereupon I had the honour to submit to you under date the 31st July last.

In view of the reported probability of railway extension to the west shore of Vancouver Island, I returned south along that coast and inspected for your information the quarantine facilities of its various sounds and inlets.

In August I inspected the leper lazaretto at Tracadie, N.B., the quarantine stations at Grosse Isle, Chatham, St. John, Halifax, Sydney, Louisburg and Charlottetown, and the quarantine buildings at Pictou, N.S.

In September I attended the meeting of the Canadian Medical Association in Montreal. The next annual meeting is to be here in Ottawa June 9, 10, 11 next. The association having now adopted a national constitution decided that its first meeting as a truly national body should be held in the national capital. The association did me the honour of electing me its president.

In the beginning of October I was present as your delegate at the annual meeting of the American Health Association held in Atlantic City, New Jersey.

At both the meetings of these two associations renewed resolutions were adopted in favour of the establishment of national departments of health.

I left again for the Pacific coast by your command on October 23, immediately upon the receipt of the news of the occurrence of cases of bubonic plague in Seattle in the state of Washington.

Before I left Ottawa, you had authorized me to appoint temporarily by telegraph the same inspectors who had been at work for smallpox. I also before leaving despatched to Dr. Watt by express the supplies received within the last year of Yersin's serum for the prevention and treatment of the bubonic plague. Anticipating some such emergency as this, I have been getting it out in monthly supplies for several years past, from the Lister Institute of Preventive Medicine, in London, where it is made according to the process of Yersin, one of the workers in the Pasteur institute. It remains good for a year, and does not depreciate more than ten per cent in eighteen months.

I reached Victoria on the 30th, where I saw Dr. Fagan, of the Provincial Board of Health; Dr. Robertson, the city health officer; Dr. Milne, of the Immigration Service; Dr. Fraser, who acts for you on occasion; and the Mayor of the city; and arranged for precautionary measures to be taken at Victoria, in all of which they promised co-operation. Here and at Vancouver I arranged that all boats from Puget Sound and from the Orient should be breasted out six feet from the piers to prevent rats jumping on and off; to have their mooring lines protected by metal discs, and the gangways reduced as far as possible and guarded by quarter masters watch and watch about. I arranged also for the fumigation with sulphur on the lay off days of any boats running a ferry service to the Sound, which lay off for one day in the week at Victoria or Vancouver.

When advising with the civic authorities of Victora and Vancouver, instruction was given for the destruction of garbage to reduce the food supply of rats, and the poisoning of the rats when the food supply had been reduced, and the offering of a premium for each rat brought in.

The companies had arranged for the inspection at Seattle of the passenger boats between that port and Vancouver and Victoria; and I put Dr. Fraser on duty to inspect all other boats arriving from Puget Sound ports. I also introduced him, as Dr. Watt was to be absent, to communicate at once with the customs officers of Chemainus, Ladysmith, Nanaimo, Union and Comox, and to instruct them to treat Puget Sound vessels coming to them direct, under the regulations for this subject, calling for medical men to inspect them as suspected vessels.

On the evening of that same day I crossed to Seattle, reaching there at ten p.m., and went direct to the pier where the *Princess Beatrice* was leaving for Victoria at 10.30. I found Dr. McDowell on duty there, and a notice up at the shore end of the passenger gangway to the effect that no passengers were allowed on board before 9.30, at which hour Dr. McDowell arrived each evening, to inspect them. As soon as that boat sailed, I went over to another pier, where the steamer *Iroquois* left for Vancouver at midnight. There I found Dr. Kellog on duty, and a similar notice to passengers, limiting their reception on board to the last hour before departure. Both of these gentlemen appeared to be thoroughly up in their work, and to be conscientiously performing their duties. The next morning, October 31, I was down at another pier at 7.30 to see the inspection of the *Chippewa*, leaving daily for Victoria at 8.30.

I spent the most of the morning in the plague laboratory, where I thoroughly convinced myself that there was no doubt whatever of the presence of the bubonic plague in Seattle. The micro-organisms under the microscope from the glands of the Chinaman that died; from the sputa of the white woman who was dying from the pneumonic form that morning, and who died in the afternoon of the same day; and from the dissections of the guinea pigs and rats which were shown to me, and which had been killed by the inoculation from the human patients; rendered this matter beyond doubt. At the time I left Seattle there had been six cases—including the two above indi-

vidually referred to—all fatal; one of the Chinamen with the bubonic form, and the other five white people with the pneumonic form.

The United States Government has made the dealing with plague in Seattle an entirely federal matter; having, at the request of the state of Washington and the city of Seattle, sent twelve of the medical officers of the United States Public Health Service for action at Seattle and its neighbourhood.

I had a long conference with Dr. White, the chief officer of the United States Public Health Service, and with the medical officers of the state and the municipality; and they agreed to take the same precautions for all vessels in Puget Sound as I had already established for vessels at British Columbia ports. Dr. White used the federal authority delegated to him to issue orders that same afternoon to all the railway companies which connect with Seattle, instructing them to sprinkle chloride of lime in the empty freight cars, and that cars standing at station platforms should be kept closed, except when it was absolutely necessary to have them open, and in all cases to be closed at night.

I also saw Mr. Croker, of the Inland Navigation Company; Mr. Burns, of the Alaska Navigation Company; Mr. Cook, of the Western Steam Navigation Company; and the Frank Waterhouse Company, managers of the Boston Tow Boat Company and freight boats to the Orient.

The president of the State Board of Health being absent in Europe, and his work being done by Dr. Yocum, of Tacoma, I went over to Tacoma on Friday morning, and saw Dr. Yocum, and also called on Dodwell and Company, of the Blue Funnel Line, which load at Tacoma and then touch at Vancouver and Victoria. All these gentlemen—both the sanitary officers and the agents—received me most kindly; expressed themselves as being very glad to get suggestions from me, as we were all working for the common good, and undertook to have all suggested precautions carefully carried out.

On Sunday, the 3rd, and Monday morning, the 4th, I had conferences with Dr. Underhill, the city health officer Vancouver; Dr. McPhillips, who was replacing our Dr. McKechnie for the time; Dr. Brydon Jack, and Dr. Stuart, who came down for the purpose from Mission Junction. I saw also Mr. Brown, of the Canadian Pacific Railway Steamship Line, and Mr. Burns, of the Great Northern, about the breasting out, &c., of their vessels, and the care of their freight cars.

During the next few days I visited and conferred with our medical inspectors at Blaine, Huntingdon, Grand Forks, Northport, and Kingsgate, in British Columbia.

I am glad to be able to report to you that my mission was a successful one, and I cannot but feel that it has led to a greater degree of protection for Canada against this dread disease. My personal investigations in Seattle have tended to more cordial co-operation with us on the part of the United States steamboat and railroad lines, and have also encouraged our frontier medical officers in taking up their professional duties in connection with this threatened pestilence.

The press on both sides of politics gave great credit in repeated issues to the government for its prompt action in sending out its senior sanitary officer to take charge of this matter.

Precautions against the importation of rats are still being maintained. Two rats, in which plague was positively determined, were found at Seattle so late as the 26th and 30th instant.

The two new steamers for the quarantine service delivered to you this year have proved entirely satisfactory. They have added much to the efficiency of the service at their respective stations. The *Alice,* built by the Canadian Shipbuilding Company at Toronto, was sent by you to the quarantine station at Grosse Isle. The *Madge,* built by the British Columbia Marine Railways Company, Limited, at Esquimalt, you devoted to service at the William Head Station on the Strait of Juan de Fuca.

Of the seagoing and other good qualities of the *Madge* I can speak from personal experience. Only delivered to us in June, I took her on July 2, and a single crew ran

her for seventeen consecutive days up to Prince Rupert and Port Simpson, and back outside Vancouver Island. We met some heavy weather in the open Pacific, but the only delay caused by the boat was one of about two hours from a heated bearing. A very satisfactory record for so new a steamer.

Under authority of 'An Act respecting Leprosy,' passed in June, 1906, which gives you administration in leprosy throughout the Dominion, arrangements were made to meet the wishes of the eight Chinese lepers you took over at D'Arcy Island, B.C., lazaretto, and by your authority they were transferred in May last back to China. This was only done after everything had been arranged for their reception at the leper mission amongst their own people near Canton. Since that, three other Chinese lepers have been discovered in the initial stages of the disease, and they also have been sent home to China.

After the lepers left D'Arcy Island their old shacks were destroyed by fire.

There are not now as far as is known any cases of leprosy left in British Columbia.

As, however, it is a disease with a period of incubation lasting often over years, it is quite possible that some amongst the Asiatic population of the province may have contracted it in the Orient and may develop it later. To meet this possibility two new shacks of concrete have been erected at D'Arcy Island for their reception temporarily or permanently as the case may be.

At the Tracadie lazaretto continued benefit follows the use of the Chaulmoogra oil treatment in cases in the earlier stages of the disease. The two cured cases previously reported as discharged from the lazaretto under a sort of sanitary ticket-of-leave have not as yet shown any sign of the recurrence of the disease.

In your administration of leprosy generally throughout the Dominion, a leper was removed in January from Winnipeg to the Tracadie lazaretto. The case was a Doukhobor youth who has been in this country for eight years.

In addition to the frontier medical inspection for bubonic plague south of British Columbia, an outbreak of smallpox in epidemic form in the states of Minnesota and North Dakota, caused the appointment under your authority of temporary medical inspectors at Fort Frances and Rainy River in Ontario, and at Sprague, Emerson, Gretna, Morden, Crystal City, Killarney, Boissevain, Deloraine, and Waskada, in Manitoba. These inspectors are still on duty.

Your two new permanent quarantine officers, Dr. Baxter, at Chatham, and Dr. Ruddick, at St. John, have taken up their duties in a manner that leaves nothing to be desired.

The Royal Sanitary Institute of England did me the unexpected honour of electing me as one of their Fellows in December last.

Grosse Isle, Que.—Vessels inspected 378, being 350 at Grosse Isle, and 28 at its sub-station of Rimouski. Persons inspected, 204,080, being 157,359 at Grosse Isle, and 46,721 at Rimouski. Infectious disease was reported or discovered on eighty vessels. The admissions to hospital were 634, with an average of 50 to 150 at a time. The diseases include smallpox, enteric fever, scarlet fever, diphtheria, measles, chickenpox and whooping cough. The deaths in hospital numbered eleven, 3 from pneumonia complicating measles, 1 from scarlet fever, 2 from diphtheria, 1 from diphtheria complicating scarlet fever, 2 from general debility, 1 from convulsions, and 1 from enteric fever.

The carrying out of the western wharf into deep water so that infected vessels might come to it for the immediate landing of their passengers, and the prompt treatment and disinfection of the vessel, continues to be a matter that is of the gravest importance in the interests of the passengers and of the shipping. The new steamer *Alice* is a valuable addition to the equipment of the station.

The replacing of the old wooden detention sheds for 2nd class and steerage passengers, which sheds date back from 1832 and 1848, by brick buildings with modern appliances is more and more urgently pressing each year.

Halifax, N.S.—Vessels inspected, 304. Persons inspected, 69,923. Vessels arriving with infectious disease, 20. Admissions to hospital, 123. Deaths, 3. The admissions included smallpox, scarlet fever and measles. The three deaths were from scarlet fever. A new boat is much needed, and a wharf at Halifax for an inspecting base.

St. John, N.B.—Vessels inspected, 190. Persons inspected, 21,785. Vessels arriving with disease, 10. Admissions to hospital, 16. Diseases; scarlet fever, diphtheria, enteric fever, measles, and chicken pox. Deaths in hospital, 2, 1 from diphtheria and 1 from enteric fever. A larger steam sterilizer, and a deep water wharf continue to be the most pressing needs at this station.

Sydney, N.S.—Vessels inspected, 116. Admissions to hospital, 2 cases of diphtheria.

Louisburg, N.S.—Vessels inspected, 23. No quarantinable disease.

Chatham, N.B.—Vessels inspected, 35. No quarantinable disease.

Charlottetown, P.E.I.—No quarantinable disease.

William Head, Victoria, B.C.—Vessels inspected, 275. Persons inspected, 48,044. Of these, 12,573 were Japanese steerage passengers, 7,667 Chinese and 2,613 Hindus. Diseases: Smallpox, chickenpox, measles, beriberi, and dysentery. Six steamers brought smallpox. Admissions to hospital, 34. Seventeen cases of smallpox, three of chickenpox, four of measles, twelve of beriberi, one of dysentery, one of septicæmia. Deaths; one from smallpox, and one beriberi.

Vancouver, B.C.—Vessels inspected, 5. No quarantinable disease.

Leprosy Generally.—In the administration of leprosy generally throughout the Dominion under the Act respecting leprosy, a leper lad was removed from the Winnipeg General Hospital to the Tracadie lazaretto in January last. He is a Doukhobor, and has been eight years in this country. Three other cases were deported to China.

Tracadie, N.B., Lazaretto.—There are at present sixteen inmates. One death occurred during the year, and three new cases have been admitted. The two 'cured' cases discharged but still under observation remain free from any recurrence of the disease.

The Chaulmoogra oil treatment continues to be of service, controlling and mitigating the progress of the disease, even in cases too advanced to hope for any more definite results.

D'Arcy Island, B.C. Lazaretto.—The eight Chinese lepers from this station were transferred to their great satisfaction to the leper mission near Canton. Two substantial cement shacks have been erected to serve as receiving houses for future cases, temporary or permanent.

Public Works Health Act.—Mr. C. A. L. Fisher reports as inspector for the territory from Winnipeg east to the Atlantic coast. He found the medical service more complete than ,and the sleeping quarters and boarding of the men to be fully equal to, the very good conditions reported last year.

Dr. T. R. Chamberlain, inspector for the territory west of Winnipeg, reports that there has been a marked improvement in the health of the men employed on railway building, and the sanitary conditions of the camps as compared with last year.

I have the honour to be, sir,

Your obedient servant,

F. MONTIZAMBERT, M.D.,

Director-General of Public Health.

The Honourable

The Minister of Agriculture,

Ottawa.

No. 2.

(G. E. Martineau, M.D.)

Grosse Isle, Quebec, April 1, 1908.

Sir,—I have the honour to submit this my annual report of the St. Lawrence quarantine service to March 31, 1908.

There were 350 vessels examined at this station during the year, being a decrease of 52 as compared with the number reported last year; this being due to the fact that the last report was covering a period of seventeen months, while this one is covering the usual period of twelve months. For the first time on record there were no sailing vessels examined.

The total number of persons examined was 157,359, being an increase of 42,560 as compared with last year.

They were divided among the different classes of passengers as follows: First cabin, 4,241; second cabin, 28,828; steerage, 90,433; cattlemen, 1,158, crews, 32,574: stowaways, 125.

The number of stowaways was considerably decreased as a result of the new regulations regarding them.

Infectious disease was reported or discovered on each of the passenger vessels sailing to the St. Lawrence from one to four times, and also on the following freighters; SS. *Mohawk, Langfond* and *Ontarian,* in all eighty times.

The diseases so reported or discovered were smallpox, scarlet fever, measles, diphtheria, varicella, pertussis, and typhoid fever.

Smallpox.—SS. *Langfond,* Captain Hansen, sailed from Barbados June 18, with 23 persons on board (all crew), and arrived at quarantine at 6.30 a.m. June 28.

On June 20, this vessel called at the port of St. Georges, in the island of Bermuda for medical aid, and the medical officer of this port added to the bill of health the following note:—

'The above ship called at this port for medical aid, only two of crew are presenting symptoms of smallpox in mild form. Persons (23) vaccinated and ship proceeds on voyage to Montreal.'

These two cases were conveyed to smallpox hospital at station, and all the rest of the crew was landed for quarantine and observation.

Owing to the fact that this vessel, after having been thoroughly disinfected, could not proceed on voyage unless her own crew took charge of her; and taking into consideration the fact that these cases of smallpox developed early on the voyage, and that all precautions possible were taken to prevent the spread of the disease on board, also, that the crew had been vaccinated first at Bermuda on June 20, those who had not been successful having been revaccinated at quarantine; the crew was under the circumstances, permitted by special authority of the department, to proceed with the steamer on July 7, the two that were in the smallpox hospital being well enough were released with the others.

Steerage passengers refusing vaccination arrived here on five different occasions, on the *Parisian, Victorian, Tunisian, Dominion* and *Corsican,* and numbered twenty-one persons. They were landed for the usual period of observation.

Deaths during the voyage were reported on 22 occasions, a total of 31 deaths, from the following causes; Heart failure, 7; meningitis, 2; broncho pneumonia, 3; bronchitis, 2; debility, 1; apoplexy, 1; convulsions, 4; dysentery, 1; delirium tremens, 1; typhoid fever, 1; chronic hydrocephalis, 1; congestion of lungs, 1.

Births during the voyage were reported on twelve different occasions.

The work at this station, especially at the hospital, has increased considerably and is likely further to increase. I would therefore respectfully recommend that the staff be increased accordingly.

There were 634 admissions at the hospital during the year, and we have always had a number varying from 50 to 150 persons at the same time suffering from different diseases.

The deaths numbered eleven; 3 from pneumonia, complication of measles; 1 from scarlet fever; 1 from diphtheria complicating scarlet fever; 2 from general debility; 1 from convulsions; 2 from diphtheria, and 1 from typhoid fever.

There was also landed for burial at quarantine the body of one child who died from dysentery on SS. *Lake Michigan*.

Quarantine staff.—Dr. E. Belisle continued to be in charge of the Rimouski substation.

Improvements and Requirements.—Deep water wharf.—The time has fully come when it is necessary to lengthen the western wharf; seeing that it is dangerous now for our boats to moor there at low tide, on account of there not being enough water; I would therefore respectfully recommend, as I have always done on every possible occasion, to have it prolonged into deep water, so as to enable the infected vessels to moor and land their passengers and effects, which would prevent many delays to the shipping and passengers.

The new quarantine steamer *Alice* was completed and delivered to the department last season.

The following improvements were carried out during last season :—

The eastern wharf has been prolonged. The administration building was completed and a new guard's house and boundary fence erected. New quarters were provided for the carter. The building where is to be installed the steam laundrying disinfecting apparatus has been erected, and I have reason to hope that it will be completed next season.

The necessary apparatus and instruments for the laboratory have been received, but the building where they are to be installed has not been commenced yet.

A new building for the accommodation of the second cabin passengers is required, also four new buildings, one for the hospital steward, one for the captain and chief engineer, one for a school house and the other one to be used as a store for the provisions, bedding, &c., necessary for the hospital.

There are still some other repairs and works necessary, the list of which is in the hands of the department.

All of which is respectfully submitted.

I have the honour to be, sir,

Your obedient servant,

G. E. MARTINEAU, M.D.,

Medical Superintendent of the St. Lawrence Quarantine Service.

The Honourable

The Minister of Agriculture,

Ottawa.

No. 3.

(N. E. MacKay, M.D., M.R.C.S.)

Halifax, N.S., March 31, 1908.

Sir,—I have the honour to submit my annual report of the year ended 31st March, 1908.

The number of vessels inspected during the year was 304, and the number of immigrants was as follows: First-class, 2,313; second-class, 11,677; third-class, 35,293; cattlemen, 130, and crew, 20,510. Total 69,923.

During the year just closed the work of the station was uneventful. Smallpox was found on one vessel—the American schooner *Fame,* from Boston. She arrived on the 7th of December, 1907, with a crew of 23 men. Only one man was sick with the disease. The well persons were vaccinated and detained in quarantine of observation the regular time—18 days. None developed the disease. The vessel and crew were disinfected in the usual way.

Measles were found on the following ships: SS. *Dominion,* from Liverpool, April 2; *Kensington,* Liverpool, April 7; *Empress of Ireland,* from Liverpool, April 12; *Southampton,* from Liverpool, April 14; *Armenia,* from Hamburg, April 29; *Ionian,* from Liverpool, April 29; *Siberian,* from Liverpool, June 26; *Empress of Ireland,* from Liverpool, November 21; *Dominion,* from Liverpool, December 1; *Corsican,* from Liverpool, December 14, *Empress of Ireland,* from Liverpool, December 19; *Pomeranian,* from Havre, January 3, and on *Empress of Ireland,* from Liverpool, March 27.

Scarlet fever was found on *Pomeranian,* from Havre, January 3, 1908. Diphtheria on *Empress of Ireland,* from Liverpool, November 21, 1907, and on *Corsican,* from Liverpool, December 14. Chicken-pox on *Canada,* from Liverpool, April 19 and December 14.

Non-quarantinable diseases occurred on the following ships: *Kensington,* April 27, phthisis; *Pomeranian,* Havre, April 11, pneumonia; *Numidian,* April 17, pleurisy; *Orinoco,* April 18, la grippe; *Victorian,* April 19, pneumonia; *Mongolian,* April 23, pleurisy; *Laurentian,* April 25, pleurisy; *Ottawa,* April 27, pneumonia; *Dahome,* April 30, pleurisy; *Hispania,* June 1, pneumonia; *City of Bombay,* June 6, la grippe; *Amethyst,* June 6, phthisis; *Carthagenian,* July 4, dysentery, and September 26, erysipelas.

Deaths occurred on following steamers: *Dominion,* April 2, rheumatism; *Kensington,* April 7, phthisis; *Pomeranian,* April 11, pneumonia; *City of Bombay,* June 6, pneumonia; *Empress of Ireland,* November 21, cerebral hæmorrhage; *Pomeranian,* January 3, scarlet fever; *Empress of Ireland,* February 27, convulsions, and *Sardinian* March 19, convulsions.

Outside our regular work, we had three coasting vessels at the station for smallpox, viz.: Government steamers *Aberdeen* and *Lady Laurier* and the *Scotia.* The *Lady Laurier* is in quarantine at the time of writing.

Three deaths occurred at the station hospital from scarlet fever. They were immigrants ex SS. *Pomeranian,* from Havre, and were all under three years.

There were 123 persons admitted to the hospital during the year just closed.

We need a bigger staff than we have at present. We need a resident engineer and a resident carpenter. They would find plenty of work to do in keeping the plant and buildings in thorough repair.

Since the new hospital was finished the staff has been increased by the appointment of an orderly and a matron and nurse. Miss F. Himelman, the matron and

nurse, is well qualified for the position to which she has been appointed. The work has been greatly facilitated by the opening of the new hospital and the appointment of a nurse and orderly. We can make the sick quite comfortable,

Mr. Himelman, the orderly, who has been laid up for two months with an attack of serious illness, is, I am pleased to report, improving fast, and will, I trust, be able to resume duty soon.

We need a new boat badly. It is to be hoped our quarantine boat is nearing completion. We should have her early in June. If the SS. *Argus* is to do much more work, there must be an outlay of from $800 to $900 put on her in the spring.

An inspecting station ashore is urgently required, and there is no better place for a station than the lumber yard. To make Lawlor's island an inspecting station is impracticable. It is hardly suitable for even a detention station and hospital. In the year 1907 eastern passage was frozen over from February till April 1, and therefore impossible. The ice was so solid that no steamer in the harbour could get through it. The SS. *Robling,* a powerful tug-boat, failed to break the ice up, as did also the government steamer *Aberdeen*. If an immigrant ship had come into port in the meantime with smallpox on board, it would have been difficult to handle her. I mention these things to show that to make Lawlor's Island an inspecting station is out of the question.

I have the honour to be, sir,
Your obedient servant,
N. E. MACKAY, M.D.,
Quarantine Officer.

The Honourable
The Minister of Agriculture,
Ottawa.

No. 4.

(R. C. Ruddick, M.D.)

St. John, N.B., April 3, 1908.

Sir,—I have the honour to submit my report for the year ended March 31, 1908.

The number of vessels inspected, 190. The number of persons inspected, 21,785, classified as follows:—

Cabin, 1,032; intermediate, 1,484; steerage, 10,713; cattlemen, 282; crew, 8,274.

No vessels arrived with the graver quarantinable diseases.

Ten vessels arrived with the minor quarantinable diseases.

The following vessels arrived with the minor quarantinable diseases:—

SS. *Lake Champlain,* from Liverpool, April 9, 1907, measles (2).

SS. *Mount Temple,* from Antwerp, April 17, 1907, scarlatina (2).

SS. *Empress of Ireland,* from Liverpool, November 22, 1907, measles (3); diphtheria (1).

SS. *Victorian,* from Liverpool, December 1, 1907, measles (1).

SS. *Cassandra,* from Glasgow, December 13, 1907, measles (2)

SS. *Empress of Ireland,* from Liverpool, December 20, 1907, measles (1).

SS. *Oruro,* from Bermuda, January 18, 1908, typhoid (1).

SS. *Empress of Ireland,* from Liverpool, February 1, 1908, chicken-pox (1).

SS. *Montezuma,* from Antwerp, March 4, 1908, measles (1).

SS. *Virginian,* from Liverpool, March 8, 1908, chicken-pox (1).

The number of patients treated at our hospital during the year, 16.

The number of deaths occurring in hospital, 2; one from typhoid, and one from diphtheria.

There were 10 deaths reported on the following ships on their voyage to this port:—

SS. *Mount Temple,* April, 1907, scarlet fever (2).
SS. *Lake Champlain,* April, 1907, suicide (1).
SS. *Acamo,* August, 1907, phthisis pulmonalis (1).
SS. *Empress of Ireland,* December 17, 1907, cerebral hæmorrhage (1).
SS. *Montrose,* January, 1908, convulsions (1).
SS. *Dahome,* January 1908, suicide, (1).
SS. *Salacia,* January, 1908, heart failure (1).
SS. *Virginian,* March, 1908, delirium tremens (1).
SS. *Salacia,* March, 1908, accidentally killed (1).

A deep water wharf is very much needed at our station, and a boat sufficiently large to perform an all-year-round service; enlargement of our sterilizing plant is required, also fencing of the new quarantine grounds is very neeessary.

I am, sir,
Your obedient servant,
R. C. RUDDICK, M.D.,
Quarantine Officer.

The Honourable
The Minister of Agriculture,
Ottawa.

No. 5.

(Horace Rindress, M.D.)

North Sydney, C.B., March 31, 1908.

Sir,—I have the honour to submit my report for the year ending March 31, 1908.

The total number of vessels inspected during the above period was 116. Of these 88 were steamships and 28 were sailing vessels. Two cases of diphtheria were found on the SS. *Fritzoe,* on May 21. They were removed and cared for at the quarantine station. The ship was disinfected and allowed to proceed at once.

With the above exeeption no quarantinable disease was brought to this port during the past year. There have been some needed repairs and improvements made at the Point Edward Station.

I have the honour to be, sir,
Your obedient servant,
HORACE RINDRESS, M.D.

The Honourable
The Minister of Agriculture,
Ottawa.

No. 6.

(F. O'Neill, M.D.)

Louisburg, C.B., March 31, 1908.

Sir,—I have the honour to submit my report for the year ending March 31, 1908.

The total number of vessels examined for the year was 23 with 699 men. No quarantinable disease of any kind was brought to this port during the above period.

I have the honour to be, sir,
Your obedient servant,

FREEMAN O'NEIL,
Quarantine Officer.

To the Honourable
The Minister of Agriculture,
Ottawa.

No. 7.

(Peter Conroy, M.D.)

Charlottetown, P.E.I., March 31, 1908.

Sir,—I have the honour to submit my report of the transactions at this station, for the year ending March 31, 1908.

No quarantinable disease was brought to this port during the year just ended. In the month of October last, by permission of the minister, the hospital was loaned to the local authorities here, for the accommodation of some cases of smallpox, an epidemic of that disease having developed in different parts of this province. The building has since been relinquished, after being thoroughly cleansed and disinfected.

A long-felt want has been supplied to the hospital, by the placing of a pump and tank in the building, for the furnishing of a sufficient supply of fresh water from the well.

The general state of the hospital quarters leaves at present little to be desired. There were nine arrivals of vessels from points beyond the line of exemption.

All of which is respectfully submitted.

I have the honour to be, sir,
Your obedient servant,

PETER CONROY, M.D.,
Inspecting Physician.

The Honourable..
The Minister of Agriculture,
Ottawa.

No. 8.

(J. McG. Baxter, M.D.)

Chatham, N.B., Mareh 31, 1908.

Sir,—I have the honour to submit the following report from the Port of Miramichi, for the period during whieh I have had the honour of serving in the quarantine station here, viz.: the last thirteen months, from Mareh 1, 1907, to date.

The number of vessels examined has been, beyond preeedent, small, on aeeount of so many of them having touched at some other quarantine port before arrival here or eoming from ports in the United States that are at present by your orders exempt from examination here.

None of those, however, whieh have been examined during that time, have had eases on board whieh required detention, but have all been remarkably healthy; nor have there been any of these erews that eontained in their number any Chinese or other persons that would be likely to cause complications.

The number of vessels examined during this time was 35.

These consisted of the following, viz.: 15 steamships, 17 barques, 2 barquentines, 1 three-masted sehooner.

The total number of men examined during this time was 615.

There have been eonsiderable changes made and repairs effected at the station here, but being interrupted by the eold weather last fall, all of these could not be eompleted, but will be resumed and finished in the spring. These will make the station much more effieient, and should it ever be ealled upon suddenly to be used for any contagious disease or otherwise, will, I hope, be found equal to the emergeney.

I have the honour to be, sir,
Your obedient servant,
J. McG. BAXTER, M.D.

The Honourable
The Minister of Agrieulture,
Ottawa.

No. 9.

(A. T. Watt, M.D.)

Victoria, B.C., April 1, 1908.

Sir,—I have the honour to submit the following report regarding transaetions at William Head Quarantine Station for the period of twelve months from April 1, 1907, to Mareh 31, 1908.

During that period there were 275 vessels inspeeted, with a total personnel of 48,044; of this number 12,573 were Japanese steerage passengers, 7,677 Chinese and 2,613 Hindu steerage passengers. The Chinese members of erew numbered 6,825 and the Japanese erew 2,941. All these Asiaties underwent disinfeetion at ports of

departure or where this had not been the case they were bathed and had their effects disinfected at this station. The passengers coming by regular lines are always so treated before embarkation, but a number of Japanese came by chartered steamers from Honolulu, and these had not been disinfected before leaving.

Bubonic plague is still existent in many ports on the Pacific ocean and in the past year there has been a recrudescence of the disease in San Francisco and an outbreak has occurred in Seattle. Smallpox has been very prevalent in Japan and to a less extent in China, and several steamers have arrived at this station with the disease on board. Cholera was quite severe in Shanghai for a few weeks last fall, and one vessel arrived here which reported two deaths on board after leaving Shanghai, on which account the vessel had been disinfected by the Japanese authorities. I also learned of cholera having broken out amongst a number of Hindu passengers before they transhipped to the steamer which brought them here. These Hindus had been through quarantine on this account at Singapore.

The diseases found on arrival and for which hospital treatment was given at this station, were smallpox, chickenpox, measles, beriberi and dysentery, also one case of fever with enlargement of glands of septic origin.

Six steamers were quarantined on account of smallpox during the twelve months. The SS. *Empress of Japan* was the first. This steamer after being in Vancouver for seventeen days was on April 17, 1907, discovered to have some of crew sick with smallpox just as she was about to sail on outward voyage. The steamer was then under jurisdiction of the Vancouver Board of Health, but at the request of the company the vessel was dealt with at this station and put in condition for making voyage. The facts as they came out afterwards were that one of the firemen was taken ill two days after arrival of vessel in Vancouver. He was seen by the ship's doctor and given some medicine, and next day was reported all right by the 'No. 1,' but in reality the Chinese had recognized by that time that he had smallpox and had hidden him away, and afterwards at every muster of the firemen one of the stewards was substituted for the sick man. An engineer and fireman were taken down with smallpox in Vancouver, and on reaching here two more firemen were found to be developing the disease. By taking such precautions that substitution was impossible the original case was brought to light and the outbreak was explained. One more fireman developed the disease on the voyage to Japan, but as the ship's surgeon was able to isolate him immediately there was nothing further. Whilst vaccinating the passengers who had got on board it was found that one of the second cabin passengers had mild smallpox. The case had no connection with the outbreak on board. The man had acquired the infection whilst travelling through the United States. The expenses for fumigating vessel and the hospital charges were met by the company in the case of this steamer, as the disease occurred after passing quarantine and whilst vessel was in port. The voyage from Japan is made by the *Empress* steamers in from ten to eleven days, so that the voyage is less than the incubation period for smallpox, so with these steamers there is always the possibility of smallpox not being manifest before quarantine inspection is made.

The British SS. *Oanfa* arrived from Liverpool April 26, 1907, with smallpox on board. There had been an outbreak early in the voyage and the steamer underwent quarantine at Singapore. But a partly new crew was shipped at Hong-Kong, and three of these men developed smallpox after leaving Japan. One case was mild and was not believed to be smallpox and was consequenty not isolated. The passengers were landed for detention, and it was the intention to have the steamer go on to the United States quarantine for fumigation, &c.; afterwards however the request was made that the work be done here, the company agreeing to make up time lost by our staff and replace disinfectants used. The prospect of being fumigated caused fourteen Japanese stowaways to appear. Three of these were women who were put inside some of the baggage and were lowered with a sling load of other baggage. They were not found until the boxes were ordered to be unpacked so that things could be sorted for disinfection.

On January 21, 1908, the British SS. *Bellerophon* arrived with five sailors suffering from smallpox, all pronounced cases. The disease had been contracted while vessel lay in Kobe, where a great epidemic of smallpox was raging. All shore leave had been stopped, but precautions had not been taken to prevent people coming on board, and a number of pedlars did so, and thus the infection was carried. From one of these people three of the crew bought boots. These men were all taken ill within twelve days, also two others who had evidently been at the same time exposed. The type of disease was severe and one man died a week after landing here. The steamer was disinfected in the usual way, and as she also proceded to Puget Sound without first calling at Victoria, it was required that the time lost and materials used be made good.

On February 6, the Japanese SS. *Kaga Maru* arrived and a Japanese steerage passenger from Kobe was found to have mild smallpox. This case was of several days' duration and the man had remained unnoticed by the ship's surgeon. The steamer was disinfected and the steerage passengers detained, also the portion of the crew not protected by vaccination.

On February 25, the British SS. *Monteagle* reached here and smallpox was found on board. This steamer had undergone fumigation at Yokohama sixteen days previously on account of having landed a fireman with smallpox. On arrival here all were reported well. On examination, however, a fireman was found to have slight smallpox rash but well out. The man had been slightly ailing and had been put in hospital and then allowed to go back to work. The steerage passengers, of whom 196 were Hindus, were landed, also such of crew as were considered protected by vaccination. The saloon passengers had all been vaccinated in Japan and were considered protected on arrival here, and so were allowed to proceed.

On March 4, the Japanese SS. *Shinano Maru* arrived and an unrecognized case of smallpox was found in steerage. The steerage passengers for Victoria, 60 in number, were landed at this station and the steamer proceeded to the United States quarantine at Diamond Point for fumigation.

Owing to these four steamers following one another so closely there were 'suspects' at the station continuously for sixty days, and our staff had arduous work without any interval for that time.

Owing to the prevalence of smallpox in the neighbouring states of Montana, Idaho and Washington, it was necessary to institute a medical inspection of persons crossing the boundary line. This inspection was continued from April 3, to July 15, 1907. In the case of the steamers the various companies engaged the services of medical men to make inspection of passengers before coming on board. This examination has been done in an acceptable manner and the certificate given has relieved vessels of inspection at Victoria or Vancouver.

Last June acting under instructions to investigate conditions at various points where smallpox had occurred, I went to Spokane and other places and was able to report that the necessity of longer continuing the quarantine did not exist, as several railway construction camps where the disease had started had been broken up. While away at this time I had the opportunity of visting the United States quarantine station for the Columbia river situated across from Astoria.

In San Francisco, where bubonic plague first appeared seven years ago, there was a recrudescence of the disease last summer, and since that time there have been 159 cases and 77 deaths from this disease in that city and some neighbouring towns. Since the first of January, however, the disease has subsided and since that time there have been but three cases. Vessels from San Francisco have been given careful inspection and precautions are taken to prevent rats coming on shore. Vessels before leaving San Francisco are given fumigation with sulphur dioxide for the puppose of destroying rats, and are furnished with a certificate that this has been done. In the case of the regular liners the fumigation is made once a month. The rats in San Francisco, of which many thousands have been examined, are found infected with plague in the proportion of 15 out of 1,000. Last October bubonic plague was found to be existent in Seattle,

and has been the cause of very great alarm. Fortunately the cases have been few in number, and but few rats have been found infected, and none of these since the first of the year. A medical inspection of passengers was instituted at railway points on the boundary, and passengers by boat were examined before going on board. This inspection remained in force from October 22, 1907, to March 31, 1908, when conditions were so far satisfactory that it was discontinued. Precautions were also taken to prevent rats coming on board vessels at Seattle and against any leaving vessels in British Columbia ports. Discs have been put on mooring lines and vessels breasted out from wharf so that rats could not jump on or off, and the gangway was not allowed out except when in actual use. It is arranged that these precautions will all be continued for some months yet. The special plague prevention work is to be continued in Seattle for two years at least and laboratory examinations are to be made of all rats brought in so that conditions will be known and if further precautions are necessary owing to finding of infected rats, they may then be taken. On the outbreak of plague being reported in Seattle, Dr. F. Montizambert, Director General of Public Health, personally investigated conditions, and after spending some time in Seattle, to which place I accompanied him, we went to the various points on the frontier where medical inspection had been instituted.

On May 1, 1907, the new quarantine steamer *Madge* was taken over from the builders, the British Columbia Marine Railway Co., Ltd. This steamer has proved most satisfactory and is most staunch and seaworthy. Last July the ss. *Madge* took to Prince Rupert, Dr. Montizambert, Director General of Public Health, and by your kind direction, myself also for the purpose of examining possible sites for the new quarantine station to be established there. Other ports were also visited and information gained which will be most useful in dealing with quarantine matters which may affect these various places.

The improvements made at the station this year have not been many, but are important. Foremost was the coming of the new steamer *Madge* already referred to. Considerable repairs were made to wharfs and some extensions and improvements made to small wharf so as to give better accommodation to ss. *Madge*. A new steam sterilizing chamber is now under construction, and although it may not be in place for a few weeks, it is to be regarded as an important improvement undertaken this year.

The lazaretto at D'Arcy island, which came under my charge in the previous year, has this year seen important changes. On May 8, 1907, I was enabled to have the eight lepers who were on the island returned to their own country and placed under care of the Presbyterian Mission at Canton. This disposition of these people was only attained after various difficulties had been overcome, but it has been a very satisfactory solution of the problem of caring for these unfortunates, and according to reports received they were comfortably settled at the mission. I was able through meeting with Dr. Andrew Beattie, a Canadian in charge of the mission to the lepers at Canton, to ascertain from him what could be done with regard to caring for the lepers in their own country. I found that acceptable arrangements could be made at small cost and that everything would be right, once they reached Canton. The difficulty was to get them there. Some of the cases were well advanced, and were not passengers that steamship people wished to have anything to do with. However, a steamer which was going to Hong-Kong direct was found ready to take the men, and special quarters were fited for them, and they made the voyage without mischance. Our thanks are due to Dr. G. D. R. Black, of Hong-Kong, for having looked to the lepers on arrival there and for having seen to their transportation to Canton and settlement with the mission.

Since the first lot went I have returned three other lepers to China without much difficulty as in their cases, the disease was not objectionable. I also have knowledge of two lepers, one a Chinaman and the other a Japanese who returned home on their own initiative. These people are always ready enough to go back to their own country so that there is nothing in the way of so handling these cases, except the difficulty of booking their passage and arranging for separate quarters for them. As opportunities

are not frequent, however, it has been considered necessary to have a receiving station at D'Arcy island. Two small buildings have just been erected there for the temporary accommodation of any lepers who may be found. A cottage for the guardian at the lazaretto has also been built. The old frame shacks which had been occupied by the lepers since the colony was established in 1892, were burned after they were vacated.

I have the honour to be, sir,
Your obedient servant,
A. T. WATT, M.D.,
Supt. B.C. Quarantines.

The Honourable
The Minister of Agriculture,
Ottawa.

No. 10.

(R. L. Fraser, M.D.)

Victoria, B.C., March 31, 1908.

Sir,—I have the honour to submit my report for the year just ended.

On account of the prevalence of smallpox in Seattle, inspection of foreign coasting vessels was ordered from April 3 to July 15. Again on the appearance of bubonic plague at the same place inspection was ordered from October 22 to March 31.

By arrangement of the Superintendent of Quarantines for British Columbia, the inspection was done for a part of the time at the ports of embarkation, my duties consisting in seeing that properly signed bills of health were produced and that due precautions were taken against the landing of rats from any boat.

During the year I examined eighty-eight (88) vessels here, and I am pleased to say found no case of contagious or quarantinable disease on any of them.

I have the honour to be, sir,
Your obedient servant,
R. L. FRASER, M.D.,
Quarantine Officer.

The Honourable
The Minister of Agriculture,
Ottawa.

No. 11.

(L. N. Mackechnie, M.D.)

Vancouver, B.C., March 31, 1908.

Sir,—I have the honour to submit this my report for the year ending March 31, 1908.

Fifty-one vessels have been inspected at this port. No case of infectious or contagious disease has been found.

Measures continue to be directed against rats coming on shore.

Medical inspection at Seattle of passengers for Vancouver is discontinued at this date.

I have the honour to be, sir,

Your obedient servant,

L. N. MACKECHNIE, M.D.

The Honourable
The Minister of Agriculture,
Ottawa.

No. 12.

(A. C. Smith, M.D., M.A., C.M.)

Tracadie, N.B., March 31, 1908.

Sir,—I have the honour to submit my annual report as physician, &c., to the Tracadie lazaretto.

There are at present sixteen inmates of the institution—nine males and seven females. There was one death during the year, and three new patients were admitted. Of the inmates, eleven are of French, two of English, two of Icelandic, and one of Russian origin. The ages of the patients vary from eight to seventy-six years.

Classifying the patients, we have seven in the first stage of leprosy, five in the second, and four in the third, the final stage. Three suspected cases remain outside. Over these I keep a constant supervision.

During the winter months there has been much intercurrent illness among the inmates. No words of mine can do justice to the unremitting care bestowed night and day upon the sufferers by the religious ladies who oversee the wards of the hospital.

Chaulmoogra oil in combination is being used by our patients, and with benefit to all. In my last report, I alluded to the case of a patient, a woman, in whom the disease seemed arrested by the use of the oil. This woman has since been discharged as cured, and remains outwardly free from the malady. I have again to report my conviction that Chaulmoogra oil in combination will cure leprosy, if taken in the early stages of the disease; and that it will mitigate the suffering and prolong life even in advanced cases. I am carefully watching results of treatment by other drugs, as reported from foreign leper hospitals.

In no country in the world are lepers so tenderly treated as they are here by the Canadian Government. Recent improvements in connection with the lazaretto, made by direction of the Director General of Public Health, are of inestimable value to the institution, and they add materially to the public safety.

I have the honour to be, sir,

Your obedient servant,

A. C. SMITH, M.D.

To the Honourable
The Minister of Agriculture,
Ottawa.

No. 13.

(Chas. A. L. Fisher, J.P.)

Montreal, March 31, 1908.

Sir,—I have the honour to submit this my report for the twelve months ended March 31, 1908, as Public Works (Health) Inspector, for the territory from Winnipeg east to the Atlantic ocean.

During that period I have personally visited and inspected all such works covered by the Public Works (Health) Act, 1899, as have in any way been brought to my notice.

The term has again been an exceptional one, in the almost non-appearance of contagious and infectious diseases among the men employed on the various public works of the Dominion, coming under my inspection, there being no outbreaks of smallpox, and only two cases of diphtheria, but in the neighbourhood of Fort William and Kenora, and some of the works east, there have been a good many cases of typhoid fever in the camp hospitals, mostly developing on new arrivals on the work.

I am sorry to have to report that at two of the public works, in my territory, the subcontractors had to be prosecuted, and were fined for non-fulfilment of the regulations in regard to the sanitary condition of their camps.

I am pleased to be able to report again, that on my several tours of inspection of the public works of the Dominion in my district for the past year, I found the medical service given to be more numerous and complete, and the sleeping quarters and boarding of the men to be fully equal to the very good conditions in that way reported last year.

The following is a detailed report of the works I have personally visited and inspected during the past twelve months, as coming, more or less, under the regulations of the Public Works (Health) Act, 1899.

RAILWAYS.

The number of public works coming under the regulations of the Act, in the territory east of Winnipeg, have been comprised exclusively of railway construction, the increased building of the National Transcontinental Railway from Winnipeg, Man., to Moncton., N.B., will add greatly to the railway mileage of the Dominion and will tend to open out a fine tract of agricultural land for settlement when completed.

NATIONAL TRANSCONTINENTAL RAILWAY.

This road is being built by the Dominion government, and at present eight sections have been given out on contract, between Winnipeg and Moncton, N.B., and are now under construction.

I am pleased to report that on my visit to the works on said sections I found excellent hospital accommodation provided, the men comfortably housed and well fed, the camps in good sanitary condition, and a duly qualified physican as district medical supervisor over each section of camps, which could be conveniently covered by him within the requirements of the regulations.

There had been no outbreak of contagious diseases, and the health of the men had been excellent, with the exception of some cases of typhoid fever.

I give below the extent and location of camps, with other particulars of the works carried on by the various subcontractors.

Section from Winnipeg east to junction of Grand Trunk Pacific branch, from Fort William, 245 miles. This is under contract to Mr. J. D. McArthur, of Winnipeg, about 4,050 men were employed thereon, located in seventy-nine camps, spreading over the route.

J. K. McLennan, M.D., of Winnipeg, is the chief medical officer on behalf of the contractor, with J. R. Gunn as medical superintendent at Kenora, Ont., which is central to the work, and he has ten district medical officers, resident at various points along the route, and excellent hospital accommodation is provided where necessary.

Whitemouth, Man., Camps.—W. Wardrop, sub-contractor. These camps are seven and fourteen miles from Whitemouth, a station on the Canadian Pacific Railway, and can be reached by team from the latter place. One hundred and twenty men were employed on grading thereat, who housed and boarded themselves in shacks and tents. There had been no contagious or infectious diseases, accidents or deaths, and their general health, and the water supply were good. The sanitary conditions of the camps, except for a very short period, were good.

The Winnipeg hospitals were used when necessary. Benjamin Lang and afterwards D. A. Volume were the resident district medical officers of the work.

Rennie, Man., Camps.—Rock work of one and one-half miles. Forty men were employed thereat, housed and boarded in log huts by the contractor, J. D. McArthur & Co., who was doing the work.

There had been no contagious or infectious diseases, deaths or accidents. The general health of the men, and the sanitary condition of the camps were good. The water supply was from wells and latrines were provided. A tent was supplied for temporary hospital use, but the Winnipeg hospital was used when necessary. J. B. Snyder, M.D., C.M., was the resident district medical officer on this work, he being succeeded last fall by D. A. McKay.

Rennie, Man., Camps.—J. V. Welsh, sub-contractor. Rock work of five miles. Fifty men were employed thereat, housed and boarded in lumber camps by the sub-contractor.

There had been no contagious or infectious diseases, accidents or deaths, and the health of the men and the sanitary conditions of the camps were good. The water supply was from wells, and latrines were provided.

A tent was provided for temporary hospital use, but the Winnipeg hospital was used when necessary.

J. B. Snyder, M.D., C.M., was the district medical officer of this work for some months, he being succeeded by D. A. McKay last fall.

Rennie, Man., Camps.—J. D. McArthur & Co., contractors. Rock work, four and one-half miles. Fifty men were employed thereat, housed and boarded in log camps by the contractors. There had been no accidents or deaths, and the general health of the men had been good, and the sanitary conditions of the camps fair. The water was from wells, and latrines were provided. The Winnipeg hospital was used when necessary.

J. B. Snyder, M.D., C.M., was the district medical officer of this work until last fall and was then succeeded by D. A. McKay, M.D.

Dagiro, Man., Camps.—McPherson, McNaughton & Blake, sub-contractors. Rock work, four and one-half miles. These camps are north from Dagiro, a station of the Canadian Pacific Railway, and twelve miles east from the Rennie camps. One hundred men were employed thereon, and housed and boarded in lumber and log camps by the sub-contractors.

There had been no contagious or infectious diseases, three accidents and two deaths, and the general health of the men, and the sanitary conditions of the camps

were good. The water supply was fairly good, being obtained from wells, and latrines were provided.

A tent was in use for temporary hospital purposes, but the Kenora hospital was used in case of necessity.

J. B. Snyder, M.D., C.M., was the district officer in charge of these camps, and was succeeded by D. A. McKay, M.D.

Dagiro, Man., Camps.—Anderson & Johnson, sub-contractors. Rock work, six miles. These camps are adjacent to, but east from the ones last mentioned.

One hundred men were employed thereat, and housed and boarded in lumber camps by the sub-contractors. There had been seven cases of typhoid fever, two accidents and one death, and the general health of the men, and the sanitary conditions of the camps good. The water supply was fairly good, being obtained from wells, and latrines were provided. A tent was supplied for temporary hospital purposes, but the Kenora hospital was used in case of necessity.

J. B. Snyder, M.D., C.M., was the district medical officer in charge of these camps, and was succeeded by D. A. McKay, M.D.

Kalmar, Ont., Camps.—Anderson & Johnson, sub-contractors. Rock work and grading. This camp can be reached from Dagiro, Man., or Kalmar, Ont., being about midway north of, and between the two stations named. Fifty men were employed thereat, housed and boarded in log camps by the sub-contractors. There had been no contagious or infectious diseases, one accident, one death, and the general health of the men had been good.

H. H. Christie, M.D., of Kalmar, Ont., was the district medical officer of this camp, but was replaced early in the season by P. McRitchie, who resides at, and has a good hospital at Lake Malachi, where patients from his camps are taken.

Kalmar, Ont., Camps.—Oleson & Larson, sub-contractors. Rock work and grading. These camps are fifteen miles north of Kalmar, a station on the Canadian Pacific Railway, and can be reached by team to Malachi lake, and then by boat.

Three hundred men were employed thereat, and distributed over five camps, No. 1 being Lake Malachi, No. 2 west two miles, No. 3 west four miles, No. 4 west six miles, and No. 5 at Rice lake. The men in each camp were housed and boarded by the sub-contractors, in good board and log buildings. There had been eight cases of typhoid fever, and one of diphtheria, but there were no other developments of contagious or infectious diseases, and there were no deaths and one accident. The general health of the men, and the sanitary conditions of the camps were good. A permanent hospital was provided at camp No. 1, but he general hospital at Kenora, Ont., would be used when advisable.

The water supply was fairly good, and taken from wells and lake. Latrines were provided at each camp.

H. H. Christie, M.D., was the resident district medical officer, but was replaced last spring by P. McRitchie.

Kalmar, Ont., Camps.—Guy Campbell, sub-contractor. Rock work principally and extending five miles. There were two main camps, known as No. 1 and No. 3, No. 1 being at Otter lake, and No. 3 two miles east. There were also two smaller camps known as No. 2 and No. 4. Two hundred and twenty men were employed thereat, housed and boarded by the sub-contractor, in comfortable log and frame buildings. There were no contagious or infectious diseases, or deaths among the men, and only a few minor accidents. The general health of the men was good, and the condition of the camps throughout excellent.

Water from wells was used for drinking purposes, and lake water for general use. Latrines were provided at all camps.

The permanent hospital at camp No. 1, Lake Malachi, was used, but the general hospital at Kenora, Ont., would be used in case of necessity. H. H. Christie, M.D.,

was the district medical officer of this work also, and was replaced by P. McRitchie, M.D.

A sudden death occurred at camp No. 1 on this work, in the person of Mrs. Guy Campbell, wife of the sub-contractor, and whom I had seen the previous day in apparently perfect health.

Kalmar, Ont., Camps.—Gordon Bros., sub-contractors. Rock work principally, extending two miles. One hundred men were employed thereat, located at two camps, one mile apart, and housed and boarded by the sub-contractors, in good log buildings. There had been no contagious diseases, accidents or deaths.

The general health of the men, and sanitary conditions of the camps were good.

The water supply was from lake and springs, and was good. Latrines were provided at each camp. At camp No. 1, Lake Malachi, hospital quarters were provided, but the general hospital at Kenora, Ont., would be used if thought beneficial.

H. H. Christie, M.D., was the district medical officer of these camps, and was replaced by P. McRitchie, M.D.

Winnipeg River Camps.—Chambers Bros., McQuigge & McCaffrey, sub-contractors. Ten miles of grading and rock work.

These camps are located fifteen miles north from Kenora, Ont., a station on the Canadian Pacific Railway, and can be reached from there by boat up the Winnipeg river, to Winnipeg river crossing, thence overland one or two miles. Three hundred and twenty men were employed thereat, located in five camps, situated west of the Winnipeg river, and housed and boarded by the sub-contractors in comfortable board and log buildings.

There had been no cases of contagious or infectious diseases, with the exception of one of typhoid. There had been minor accidents, but no deaths.

The general health of the men, and the sanitary conditions of the camps were good.

The water supply was good, and was from lake and springs. Two latrines were provided for each camp. Temporary hospital quarters were provided, with a permanent hospital east of the McFarland river, and the general hospitals at Kenora, were used when necessary.

H. A. Abraham, M.D., was the resident district medical officer of these camps in the early part of the season, and was then replaced by R. Wightman, M.D., and he by L. C. Panton, M.D.

Winnipeg River Camps.—Dutton & McArthur, sub-contractors. Five and one-half miles of grading and rock work. There were three camps situated east of the McFarland river, and three hundred men were employed on the work, who were housed and boarded by the sub-contractors in comfortable board and log buildings.

There had been five cases of typhoid fever, but no other cases of contagious or infectious disease. There were three accidents, and two deaths. The general health of the men, and sanitary conditions of the camps had been fair.

The water supply was good, and two latrines were supplied for each camp. There was a permanent hospital conveniently located for the various surrounding camps, with an hospital orderly and graduated female nurse employed thereat, under charge of H. A. Abraham, M.D., who was the district medical officer of this work, and was assisted by L. C. Panton, M.D., who succeeded him in charge of the hospital.

Winnipeg River Camps.—Courtney & McRae, sub-contractors. Five miles rock and earth work. There were two camps east of Basket lake, and one hundred and twenty men were employed on the work, who were housed and boarded by the sub-contractors in good log buidings. There had been three cases of contagious diseases, two accidents, no deaths.

L. C. Panton, M.D., was the district medical officer in charge of the men, and was succeeded by R. Wightman, M.D.

Winnipeg River Camps.—Baulf & Stinson, sub-contractors. Four miles rock and earth work. There were two camps situated on the side of a lake, and one hundred men were employed on the work, who were housed and boarded by the sub-contractors in good log buildings. There had been no contagious diseases or accidents, and no deaths. The general health of the men has been good. The permanent hospital at Winnipeg River was used. L. C. Panton was the district medical officer of these camps and was succeeded by R. Wightman, M.D.

Winnipeg River Camps.—McCaffrey & Hicks, sub-contractors. Two miles of rock grading. One camp situated fifteen miles east of Winnipeg River crossing.

About one hundred men were employed on the work, and were housed and boarded by the sub-contractors in log buildings. There had been one case of typhoid, one accident, and no deaths. The general health of the men had been good, and the permanent hospital at Winnipeg River crossing was used when necessary.

Robert Wightman, M.D., was the district medical officer of this camp.

Hawk Camps.—A. J. McDougald, sub-contractor. Grading and filling.

There are two camps, No. 1 located at Wild lake, and No. 2 at Spectacle lake. These camps are some miles north from Hawk, a station on the Canadian Pacific Railway, and can be reached by team and canoe from there, or from Margach, another station on the Canadian Pacific Railway, direct by canoe, with several portages to make.

One hundred and thirty men were employed thereat, housed in log buildings, and boarded by the sub-contractor.

There had been eight or ten cases of typhoid fever at camp No. 1, no accidents and one death. Camp No. 1 was very bad, being located on muskeg, and the water was badly contaminated. The sub-contractor after unheeded warnings, being prosecuted and fined, after which the buildings were removed to high ground, good water procured and used for drinking and culinary purposes, and then the general health of the men became good and the sanitary condition of the camps was properly looked after.

There was a good hospital (known as Wild Lake hospital) erected on a point of the lake opposite camp No. 1, which was at first in charge of Robert Wightman, M.D., as district medical officer, but he being taken down with typhoid, was removed as a patient to the Jubilee hospital at Kenora, and was temporarily replaced at the Wild Lake hospital by L. C. Panton, M.D., who was succeeded by J. O. Walker, M.D., as resident and district medical officer thereof, and he is still in charge. Two trained female nurses and an hospital orderly were employed at said hospital.

Hawk Camps.—T. O. Sullivan, sub-contractor. Grading and filling.

This camp was located at Cariboo lake, and about seventy-five men were employed thereat, who were housed in log buildings and boarded by the sub-contractor. There had been no contagious or infectious diseases, accidents or deaths, and the general health of the men, the water used, and the sanitary condition of the camp were good.

The hospital at Wild Lake was used when necessary. R. Wightman, L. C. Panton and M. J. O. Walker, being the district medical officers of this camp for various periods, the latter being at present in charge.

Hawk Camps.—Thompson & Egan, sub-contractors. Grading and filling.

There are three camps located, No. 1 on north shore of East lake, No. 2 east end of East lake, and No. 3 east end of Flavelle lake.

About two hundred and forty men were employed who were housed in log buildings, and boarded by the sub-contractors. There have been no cases of infectious diseases with the exception of one case of typhoid which recovered, one death, and no accidents of serious nature. The general health of the men, the water, and the sanitary condition of the camps were good.

The hospital at Wild lake was used when necessary.

R. Wightman, L. C. Panton, and M. J. O. Walker, have been district medical officers of these camps, the latter in charge at present.

Hawk Camps.—Welsh Bros., sub-contractors. Grading, filling and rock work. There are four camps, No. 1 being at east end of Cache lake, No. 2 at west end of Cache lake, No. 3 at Summit lake, and No. 4 (Sharp's camp), at Northwest lake.

About four hundred men were employed, who were housed in log buildings, and boarded by the sub-contractors, with the exception of a few Italians who housed and boarded themselves. There had been no contagious diseases, two accidents, and three deaths, one being from drowning.

At camp No. 1, the stable had to be removed to another site, owing to its contaminating the water of the lake, which had to be used, but otherwise the health of the men, the water supply, and the sanitary condition of the four camps were fairly good.

The hospital at Wild lake was used when necessary.

R. Wightman, L. C. Panton and M. J. O. Walker, have been the medical officers of these camps, the latter in charge at present.

Vermilion Bay Camps.—Anderson & Johnson, sub-contractors. Grading, rock work and filling. There are seven camps, the first of which is located fifteen miles north of Vermilion, a station on the Canadian Pacific Railway, and can be reached by team from there. Four hundred and sixty-five men were employed thereat, housed in log buildings, and boarded by the sub-contractors. There had been no contagious or infectious diseases. Three accidents, no deaths, and the general health of the men, the water obtained, and the sanitary condition of the camps, all first class.

There is a permanent hospital at Parsons camp No. 1, a few miles north on a good road and boat route, that is used when necessary.

H. L. Sims, M.D., is the resident district medical officer of this work.

Vermilion Bay Camps.—Cunningham & Nelson, sub-contractors. Eighty men were employed on this work, and were housed and boarded in good log buildings, by the sub-contractors. There had been no contagious or infectious disease, no accidents and no deaths. The general health of the men had been very good, the water supply and the sanitary condition of the camp fair.

The hospital at Parsons camp No. 1 was used when necessary. H. K. Sims, M.D., was the district medical officer in charge of this work.

Vermilion Bay Camps.—J. Woods & Co., sub-contractors. Thirty men were employed on this sub-contract, who were housed and boarded in log buildings, by the sub-contractors. There had been no contagious disease, three serious accidents, no deaths, and the general health of the men had been good.

The hospital at Parsons camp No. 1, was used when necessary. H. K. Sims, M.D., was the district medical officer in charge of this work.

Vermilion Bay Camps.—Leudstrom & Co., sub-contractors. Twenty-five men were employed, who were comfortably housed and boarded by the sub-contractors.

There had been no contagious diseases, accidents or deaths, and the general health of the men, and the condition of the camp good.

The hospital at Parsons Camp No. 1 was used when necessary. H. L. Sims, M.D., was the district medical officer in charge.

Vermilion Bay Camps.—H. Botham & Co., sub-contractors.

Twenty-five men were employed who were well housed and boarded by the sub-contractors.

There were no contagious diseases, accidents or deaths, and the general health of the men was good.

H. L. Sims, M.D., was the medical officer.

Vermilion Bay Camps—Maudsith & Co., sub-contractors.

Twenty-five men were employed, who were comfortably housed and boarded by the sub-contractors.

There were no serious diseases, deaths, or accidents, and the health of the men was good.

Vermilion Bay Camps.—W. T. Parsons, sub-contractor. Rock work chiefly. These camps are situated about eighteen miles from Vermilion bay, and can be reached by team. Four hundred and fifty men are employed, who are located in seven camps, situated on Canyon lake, and housed and boarded in good log buildings, by the sub-contractor. There have been ten cases of typhoid, but no other contagious or infectious diseases, seven serious accidents and five deaths. The general health of the men has been good, and the sanitary conditions of the camps very fair. Good water is obtained from Canyon lake, and latrines are provided for each camp. A good hospital has been established at W. T. Parson's headquarters camp, with an orderly and trained female nurse employed.

D. G. Dingwall, M.D., is the district medical officer residing at these camps.

Vermilion Bay Camps.—Chas. Peterson, sub-contractor. Rock and sand work. One hundred and fifty men are employed on this sub-contract, who are located in two camps, and housed and boarded in log buildings by the sub-contractor. There have been no contagious diseases, only one serious accident and no deaths. The general health of the men, the sanitary condition of the camps, and the water supply has been good. The permanent hospital at W. T. Parson's headquarters is used when necessary.

D. C. Dingwall, M.D., is the district officer of these camps.

Vermilion Bay Camps.—Geo. Jachetta, sub-contractor. Rock work principally. One hundred and seventy-five men are employed on this work, located in two camps, situated on Little Canyon lake, and are housed and boarded in good log buildings, by the sub-contractor. There has been one case of typhoid, but no other cases of contagious or infectious diseases, some minor accidents, and no deaths. The general health of the men, the sanitary condition of the camps, and the water supply has been good. Latrines are provided, and the permanent hospital at Parson's head camp is used when necessary.

D. G. Dingwall, M.D., is the district medical officer of these camps.

Vermilion Bay Camps.—J. P. Morgan, sub-contractor. One hundred and twenty men were employed, who are housed and boarded in log buildings by the sub-contractor. There were two cases of typhoid, seven rather serious accidents, and one death from dynamite explosion. The general health of the men, the water used, and the sanitary condition of the camp has been good. The permanent hospital at Parson's camp was used when necessary.

D. G. Dingwall, M.D., is the district medical officer of the camp.

Dryden, Ont., Camps.—Geo. H. Webster, sub-contractor. Fourteen miles of rock and earth work. The camps are six in number, the first situated some eighteen miles north from Dryden, Ont., a station on the Canadian Pacific Railway, and can be reached by team from there. Three hundred and ninety-five men were employed on the work, who are boarded and housed in good log buildings by the sub-contractor. There had been no contagious disease, two accidents, seven deaths from dynamite explosion, and one from natural causes. The general health of the men had been excellent, and the water and the sanitary conditions of the camps good. A permanent hospital is established at No. 4 camp (which is headquarters), employs an hospital orderly and a trained female nurse, and is under the charge of John Brandon, M.D., as district medical officer of all these camps.

Dryden, Ont., Camps.—O. C. Thompson, sub-contractor. Rock cutting and excavation. One camp located at extreme western end of Webster's sub-contract. Sixty-five men were empoyed, and were housed in well built log buildings, and well boarded by the sub-contractor. One patient only had been taken to the hospital, and there had been no contagious diseases, serious accidents or deaths. The general health of the

men had been excellent, the water was good, being taken from a spring, and the camp is one of the cleanest I have seen on railway construction work. A well equipped hospital is provided for temporary use.

John Brandon, M.D., is the district medical officer attending the employees of this camp.

Dryden, Ont., Camps.—P. W. McLean, sub-contractor, eight miles of earth and rock work. These camps are three in number, and are situated twenty-eight miles northeast of Dryden, and can be reached from there by team. One hundred and twenty men were employed on the work, who were housed and boarded in good log buildings by the sub-contractor.

There had been no contagious or infectious diseases, no serious accidents, and no deaths. The general health of the men had been excellent, and the water and sanitary conditions of the camps were good. Temporary hospital accommodation was provided, and the permanent hospital at T. H. Webster's camp was used when necessary.

John Brandon, M.D., was the district medical officer of these camps.

Wabigoon, Ont., Camps.—Swan Swanson, sub-contractor, from the Eastern Construction Company, under their sub-contract from the J. D. McArthur Company. Ten miles of rock and earth work.

These camps are four in number, and are situated two miles northeast from the last above named and can be reached by team therefrom, or from Wabigoon or Dinorwic, both stations on the Canadian Pacific Railway by team and then by boats. Three hundred and fifty-five men were employed on the work, who were housed and boarded in good buildings by the sub-contractor. The general health of the men had been very good, and the water and sanitary condition of the camps had also been good. There had been no contagious or infectious diseases, accidents or deaths. Temporary hospital accommodation was provided, but the permanent hospital at camp No. 2 of the Eastern Construction Company, was used when the doctor thought it advisable.

F. H. Trousdale, M.D., had been the district medical officer of these camps for the first quarter of the year, and was succeeded by Dr. White, who only remained a short time, and was succeeded by W. W. Nasmith, M.D., who is now in charge of the camps.

Wabigoon, Ont., Camps.—Eastern Construction Company, sub-contractors. Twenty miles of rock and earth work.

There are five camps, rnnning from the extreme easterly end of the McArthur contract, and can be reached by team from Wabigoon and then by boats and portages. About three hundred men were employed on the work, who were housed in good log and board buildings, and well boarded by the sub-contractors. The general health of the men had been excellent, and the water supply, and the sanitary condition of the camps good. There had been no contagious or infectious diseases, and no serious accidents or deaths. A permanent hospital was maintained at the headquarters camp No. 2, and was provided with an hospital orderly and a trained female nurse.

F. H. Trousdale, M.D., had been the district medical officer of these camps, but was succeeded by Dr. White for a short period, and he was replaced by W. W. Nasmith, M.D., who is now the medical officer residing at the camps.

Abitibi Section.—Districts 'C' and 'D.' From about eight miles west of the Abitibi river, crossing easterly for one hundred and fifty miles.

This section was let to the Grand Trunk Pacific Construction Company, and sublet by them to the J. H. Reynolds Construction Company, of St. Louis, U.S.A.

McDougalls Chute Camps.—The J. H. Reynolds Construction Co., sub-contractors. Access to these camps is by the Temiscaming and Northern Ontario Railway to McDougalls Chute, then fifty miles north by road in winter, and in summer by canoe on the Abitibi river to the crossing.

Construction work is only commencing on this section, and the sub-contractors have been getting in the necessary machinery, implements and supplies during the winter roads.

With the exception of some right of way camps, there are only two permanent camps at present, one located at McDougalls Chute, and the other fifty miles north at the crossing of Abitibi river. Only about one hundred men have been employed up to the present, who are housed in framed camps and boarded by the sub-contractors. The general health of the men and the sanitary conditions of the camps have been good. There were no serious diseases, accidents or deaths, and hospital accommodation was provided at the northern camp.

John McCombe, M.D., is the supervising medical officer for the sub-contractors, and George R. Johnson, M.D., is the resident district medical officer. Eastern section district 'B' from a point a few miles northwest of La Tuque village, to a point known as Weymonachene, a distance of about forty-five miles. This section was let to the Grand Trunk Pacific Construction Company, and was sub-let by them to Messrs. Macdonnel & O'Brien. There were ten sub-contractors under Messrs. Macdonnel & O'Brien on this section, who had twenty camps, and employed about seventeen hundred men, who were housed in good log buildings, and boarded by the sub-contractors on the work.

There had been twenty-five cases of typhoid, and one of diphtheria, no serious accidents, but there were five deaths. The sanitary condition of the camps, the quality of water used, and the general health of the men were good. A good-sized hospital was erected and maintained at the 'Little Farm,' Vermilion river, with an hospital orderly employed. B. Denovan, M.D., was the district medical officer of the westerly camps of the section, with residence at the hospital, and N. A. MacNab, M.D., had been district medical officer of the eastern camps of the section for some time, and was succeeded by D. Nathan, M.D., who is in charge at present. John McCombe, M.D., is the medical supervisor of the work on behalf of Messrs. Macdonnel & O'Brien.

Quebec Section.—From a few miles northwest of La Tuque village, southeast 100 miles, to junction of section of sub-contract let to Messrs. M. P. and J. T. Davis. This is under contract to Messrs. Macdonnel & O'Brien, of Montreal. Four hundred and twenty-five men were employed thereon.

John McCombe, M.D., of Buckingham, Que., is the chief medical officer on behalf of the contractors, and has two district medical officers, resident at suitable points on the route, with a hospital established under charge of a district medical officer and caretaker, in the neighbourhood of La Tuque village.

Drs. J. A. Ribirdy and James Franckum, being the district medical officers.

La Tuque Camps.—Brennan & Munro, sub-contractors. There was one camp at which about fifty men were employed, and who were well housed and boarded by the sub-contractors. There were no infectious diseases, serious accidents or deaths. J. A. Ribirdy was the district medical officer in charge.

La Tuque Camps.—A. Finlayson was the sub-contractor. There was only one camp, situated at Creek au Beauce, at which sixty men were employed, housed and boarded in wooden buildings by the sub-contractor. There had been three cases of tyhoid, no deaths, and but one accident. The health of the men, water supply and sanitary conditions were good.

T. Hewitt, M.D., had been the district medical officer of this camp, and was succeeded by J. A. Ribirdy, M.D., who is at present in charge.

La Tuque Camps.—Jackson & Connolly, sub-contractors. There are two camps situated at Lac au Beauce, in the La Tuque district, at which ninety men were employed, who were housed and boarded in log buildings by the sub-contractors.

There had been one case of typhoid, no accidents or deaths, and the general health of the men, the water supply and the sanitary condition of the camps, were good.

Two latrines were provided, and also an hospital tent. The doctors last mentioned were the district medical officers of these camps.

La Tuque Camps.—O'Brien & Martin, sub-contractors for grading, &c., nine to ten miles.

There are two camps situated in the neighbourhood of La Toque village, about fifty-two miles from Hervey Junction, on the Canadian Northern Railway, and can be reached by rail, by team or by boat, when the water in the river permits.

One hundred men were employed thereat, who were housed and boarded by the sub-contractors, with the exception of some who resided in the neighbourhood.

There had been one case of typhoid, no deaths and only one accident. The general health of the men, the water supply, and the sanitary condition of the camps were fair. A tent was provided for temporary hospital accommodation, but a permanent hospital was established in a convenient place. Latrines were provided for each camp.

T. Hewitt, M.D., has been resident district medical officer of these camps, and was succeeded by James Franckum, M.D., who is at present in charge and resides at the hospital.

La Tuque Camps.—There are two other small camps in this locality, one operated by A. Munson, as sub-contractor, and the other, by D. R. MacDonald, as sub-contractor.

Only about one hundred men are employed in the two camps, who are well housed and boarded by the sub-contractors, their general health being excellent, and there being no serious accidents or deaths.

James Franckum, M.D., is the district medical officer of these camps.

Reeds Camps.—The work at these camps, which are south of the La Tuque camps, is about completed, several of them being closed, and very few of the men being employed at any of the others. The health of these men had been generally good, but there were several cases of typhoid and one death therefrom, and one death from an accident at Hervey Junction, the man falling into the grating of the steam shovel.

B. Bordeleau, M.D., was the district medical officer over the few men employed.

St. Prospère Camps.—McInnes & McInnes, sub-contractors for grading, &c. These camps can be reached from Grandine, a station on the Canadian Pacific Railway. Sixty men were employed on the work, who were housed and boarded by the sub-contractors in good wooden buildings. There had been no contagious diseases, accidents or deaths, and all other conditions were good. A temporary hospital in charge of Dr. Bordeleau, at St. Thecile was used.

B. Bordeleau, M.D., was the district medical officer of the work.

Section from Quebec Bridge.—Fifty miles northwest. The contract for this work was given to Messrs. MacDonnel & O'Brien, of Montreal, together with the section reported above as being constructed by them, but they sub-let these fifty miles to Messrs. M. P. and J. T. Davis, of Quebec, who are constructing the same, with three sub-contractors under them. Messrs. Lothain, Rainboth, Roberge and Chagnon.

Several hundred men were employed thereon, but there are no special camps, the men living in their own homes, or boarding with residents scattered along the line.

There had been no contagious or infectious diseases and no deaths, but there were four minor accidents. The general health of the men and the sanitary conditions were good, the water supply being fair.

J. P. Lavoie, M.D., of Quebec, was the chief district medical officer early in the year, with A. Marcotte, M.D., as resident district medical officer at St. Basile, P.Q. This work is about completed.

Quebec Section, District 'B.'—From a point near Quebec bridge easterly for a distance of one hundred and fifty miles.

This section was let to Messrs. M. P. and J. T. Davis, of Quebec, who have sublet it in small sections to various sub-contractors.

J. E. Parent, M.D., of Quebec, is the chief medical officer of the whole work.

St. Lambert Camps.—Peacock & Leamy, sub-contractors for fifty miles. There were two camps with about one hundred and forty men employed, some of them housed and boarded by the sub-contractors, some by themselves. There had been no infectious diseases, accidents or deaths, and the general health of the men, and sanitary conditions of camps had been good.

A hospital at St. Anselme was used when necessary. J. E. Parent, M.D., was the district medical officer of these camps.

St. Isidore Camps.—Patrick Purigo, sub-contractor for five miles. About seventy men were employed, who housed and boarded themselves. There were no infectious diseases, accidents or deaths, the health of the men being good.

The hospital at St. Anselme was used when necessary. J. E. Parent, M.D., was the district medical officer of this work.

St. Claire and St. Anselme Camps.—A. Morrison, sub-contractor for fifteen and one-half miles. These were fair camps with about two hundred men employed, who were well housed and boarded, some by the sub-contractor, some by themselves.

There were no infectious diseases, serious accidents or deaths, the health of the employees being good. St. Anselme hospital was used.

J. E. Parent, M.D., was the district medical officer.

St. Malachie Camps.—A. McGougan, sub-contractor for seven miles. There were four camps, with two hundred and twenty men employed, who were well housed and boarded by the sub-contractor.

There was one case of typhoid, four serious accidents but no deaths, the general health of the men, the water used, and the sanitary conditions of the camps, being good.

The hospital at St. Anselme was used when necessary.

J. E. Parent, M.D., was the district medical officer of these camps.

St. Lazare Camps.—Beaurigard & Dufour, sub-contractors for seven miles. There were four camps and about one hundred and seventy-five men employed, who were housed and boarded by separate caterers for each camp.

There were two cases of typhoid, but no other infectious diseases, one serious accident, and one death. The general health of the men, the water supply, and the sanitary state of the camps were good.

There was a hospital at St. Anselme that was used. J. O. Saint Pierre, M.D., of St. Gervais, county of Bellechasse, was the district medical officer.

Armagh Camps.—Johnson & Sabiston, sub-contractors for concrete work. There were about fifty men employed who lodged and boarded in surrounding houses.

There were no serious diseases, accidents, or deaths. This work is now completed. J. O. Saint Pierre, M.D., was the district medical officer.

Armagh Camps.—Gagnon & Massicotte, sub-contractors for five miles. About one hundred and seventy-five men were employed, who were located in two camps, and well housed and boarded by the sub-contractors. There had been no infectious diseases, serious accidents or deaths, and the general health of the men, and sanitary condition of camps good. The hospital for various camps was located here.

J. O. Saint Pierre, M.D., was the district medical officer.

Armagh Camps.—Murdock Bros., sub-contractors for ten miles. There were four excellent log camps, at which about four hundred men were well housed and boarded by the sub-contractors.

There had been two cases of typhoid, no serious accidents and no deaths. The general health of the men had been very good, and the water supply and sanitary conditions of the camps excellent.

The hospital for use of various camps was near by, and easily accessible from all camps. J. O. Saint Pierre, M.D., was the district medical officer.

Armagh Camps.—P. Pilot, sub-contractor from Murdock Bros. There was only one camp at which about forty men were employed, and there had been no serious diseases, accidents, or deaths. J. O. Saint Pierre, M.D., was the district medical officer.

St. Rosaire Camps.—A. M. Ryan, sub-contractor for ten miles. There were three camps, with about three hundred men employed, who were housed and boarded in good buildings and well boarded by the sub-contractor.

There had been one case of typhoid, two accidents, but no deaths. The general health of the men was excellent, and the water supply and sanitary conditions good.

The hospital at Armagh was used. J. O. Saint Pierre, M.D., was the district medical officer.

Bras D'Apie Camp.—Perron & Co., sub-contractor for seven miles. About one hundred and fifty men were employed, who were well housed and boarded by the sub-contractors. There had been no serious diseases, accidents, or deaths, the general health of the men, and condition of the camp being good.

There was a hospital established at St. Perpetue, county of L'Islet, for general use of surrounding camps.

J. P. Masse, M.D., of St. Perpetue, was the district medical officer.

St. Perpetue Camp.—Stewart Bros., sub-contractors for eight miles. About fifty men were employed, who were well housed and boarded by the sub-contractors. There had been one case of typhoid, but no serious accidents or deaths. The general health of the men and the condition of the camp were good. The permanent hospital was established here.

J. P. Masse, M.D., was the district medical officer.

Lac Ste. Anne Camps.—Dibona, Orlando Bros., sub-contractors for seven and one-half miles. About forty men were employed, who were well housed and boarded by the sub-contractors. There had been no serious diseases, accidents or deaths, the health of the men and the condition of the camp being good. The hospital at St Perpetue was used.

J. P. Masse, M.D., was the district medical officer.

Lafontaine Camp.—Wm. D. Scott, sub-contractor for five miles. There were only forty men employed in this camp, who were housed and boarded by the sub-contractor. There had been no serious diseases, accidents or deaths the general health of the men being good.

The hospital at St. Perpetue was used when necessary.

J. P. Masse, M.D., was the district medical officer of this camp.

New Brunswick Section, District 'A.'—From a point near Grand Falls, westerly to the boundary between the provinces of New Brunswick and Quebec, a distance of about sixty-two miles. This was let to Messrs. Lyons & White, who have made their headquarters at Edmundston, N.B., and have sublet the work to various sub-contractors.

Baker Brook and Lake Camps.—Messrs. Kennedy & MacDonald, sub-contractors. There are two camps with about one hundred and twenty-five men employed, who are well housed and boarded by the sub-contractors. There had been no contagious diseases, serious accidents or deaths. The general health of the men was good, the water was of excellent quality, being obtained from springs, and the sanitary conditions of the camps were good. The Hotel Dieu Hospital at St. Basil, N.B., was used

when necessary. P. H. Laporte, M.D., of Edmundston, was the district medical officer in charge.

Caron Brook Camps.—W. J. Sims & Co., sub-contractors. There are three camps, with about two hundred and fifty men employed, who were well housed by the sub-contractors, but boarded themselves. There had been no infectious diseases or deaths, but there were three serious accidents. The general health of the men and the condition of the camps were good, and the water used was first quality.

The Hotel Dieu Hospital at St. Basil, N.B., was used when required.

P. H. Laporte, M.D., was the first medical officer in charge.

St. Basile Camps.—W. J. Sims & Co., sub-contractors. There was only one camp with about thirty employed, who were housed by the sub-contractors, but boarded themselves. There were no serious diseases, deaths or accidents.

The Hotel Dieu Hospital was located near by and was used when required. J. Adolphe Guy, M.D., of Edmundston, was the district medical officer.

St. Basile Camps.—H. Sorette, sub-contractor. There were four camps, and about one hundred and tweny-five men employed, who were housed by the sub-contractor, and some of them boarded by him, the others boarding themselves.

There were no serious diseases, accidents or deaths, and the general health of the men was good. The Hotel Dieu Hospital was used.

J. Adolphe Guy, M.D., was the district medical officer.

St. Basile Camps.—L. W. Reade, sub-contractor. There were three camps, with about one hundred and twenty men employed, who were housed by the sub-contractor, and partly boarded by him, the others boarding themselves.

The local Hotel Dieu Hospital was used. There had been no serious diseases, accidents or deaths, the general health of the men being good.

J. Adolphe Guy, M.D., was the district medical officer.

St. Leonard Camps.—Allan & McInnes, sub-contractors. About seventy-five men were employed, who were housed and boarded in three camps by the sub-contractors.

There were no serious diseases, accidents or deaths, the health of the men being good.

C. G. Main, M.D., of Edmundston, was the district medical officer.

St. Leonard Camps.—Henry Sorette, sub-contractor. There was one camp with about thirty employees, who were housed and boarded by the sub-contractor.

There were no serious diseases, accidents or deaths. The hospital at St. Basile was used. C. G. Main, M.D., was the district medical officer.

St. Leonard Camps.—Wheaton Bros., sub-contractors. There were two small camps with about fifty men employed, who were housed and boarded by the sub-contractors.

There were no serious diseases, accidents or deaths, and the St. Basile hospital was used.

C. G. Main, M.D., was the district medical officer in charge.

Moncton Section, District 'A.'—From a point near the city of Moncton, N.B., westerly for a distance of about fifty miles. This was let to the Grand Trunk Pacific Construction Company, and was sublet by them to the Corbett Floesch Co. There is an adjoining section of eight miles, that was let to the John W. McManus Co., Ltd.

H. B. Hay, M.D., of Chipman, N.B., is the medical superintendent of both the above sections.

Chipman Camps.—John W. McManus Co., sub-contractors for eight miles. There were two camps, No. 1 at Chipman, No. 2 about three miles east. There were about forty men employed, some of whom were housed and boarded by the sub-contractors,

others by surrounding residents. There had been one case of diphtheria, but no other serious diseases. There was one serious accident, but no deaths.

Temporary quarters were provided for hospital purposes. The general sanitary conditions, and the water supplied was fair. H. B. Hay, M.D., was the district medical officer.

Chipman Camps.—Corbett, Floesch & Co., sub-contractors for fifty miles. There was one camp at Chipman with about fifty employees, housed and boarded by the sub-contractors. There had been no contagious diseases, serious accidents, or deaths, and the health of the men and condition of the camp was good. H. B. Hay, M.D., was the district medical officer.

Moncton Camps.—Corbett, Floesch & Co., sub-contractors. There were three camps, No. 1 being two miles from Moncton, No. A four miles therefrom, and No. 2 eleven miles therefrom. Three hundred and twenty-five men were employed, who were mostly housed and boarded by the sub-contractors, a few living with surrounding residents.

There had been one case of erysipelas, six accidents, but no deaths. The general health of the men, the sanitary condition of the camps, and the water used were good.

A. R. Myers, M.D., of Moncton, was the district medical officer attending these camps.

GRAND TRUNK PACIFIC RAILWAY.

Branch from Fort William to junction of National Transcontinental Railway, 210 miles.

Messrs. Foley Bros., Larson & Co., are the contractors with headquarters at West Fort William, Ont., from the commencement of the work, but which were removed to Dinorwic, Ont., and there are twenty sub-contractors.

About two thousand men were employed, located at thirty camps along the route, housed in wood buildings and boarded by the contractors. The sanitary condition on the work was good, there being latrines at each camp. The general health of the men has been excellent, with the exception that a good many cases of typhoid developed, owing to the poor quality of the water obtainable.

There were thirteen serious accidents, with six deaths in all. Three well equipped hospitals are maintained, well located, and each in charge of a resident medical man and a trained nurse, one at Fort William in charge of F. J. Ewing, M.D., and a medical assistant, one at Grassey Narrows, Ont., that was in charge of J. A. Speers, M.D., he being succeeded by Dr. Baillie, who is now in charge, and one at Camp Mile 180, that was in charge of A. E. Hylis, M.D., who was succeeded by F. H. Callahan, M.D., who is the resident district medical officer at present.

F. J. Ewing, M.D., is the chief medical officer for the contractors, and makes his headquarters at Fort William, Ont.

CANADIAN PACIFIC RAILWAY.

Kenora Section.—Rock work extending over seventy miles. Messrs. Foley Bros., Larson & Co., are the contractors, and they in the early part of the season, were double tracking the line in places, from Fort William to Winnipeg.

About two thousand men were employed who were housed and boarded in lumber camps by the contractors. There had been a good many cases of typhoid fever, with several deaths therefrom, and some serious accidents and deaths from dynamite explosions. The general health of the men was otherwise good, as were also the sanitary conditions of the camps, the refuse being either burned or carted away, and box closets supplied and regularly cleaned. The general hospital at Kenora is used when necessary.

W. J. Gunne, M.D., of Kenora, is the district medical officer of this work.

Toronto-Sudbury Branch.—Parry Sound to Byng Inlet, Ont., forty miles. The Ross-Harris Company, Limited, of Parry Sound, are the contractors. About six hundred men were employed who were housed in good log and board buildings, and boarded by the contractors.

Of contagious and infectious diseases, there had been none. There were many minor accidents and two deaths.

The general health of the men had been good. The water supply obtainable was poor, even from wells.

Latrines were supplied, and the sanitary conditions of the camps were good.

There was an excellent permanent hospital established in a central locality, under charge of J. P. Russell, M.D., who was the district officer of the work.

This work is about completed.

Walkerton-Lucknow Branch.—From a point on the Canadian Pacific Railway, near Picton, Ont., westerly to the town of Walkerton, Ont., a distance of thirty-seven and one-half miles. Messrs. Macdonald & Stephen, of Durham, Ont., are the contractors. About four hundred men were employed, who were well housed and boarded by the contractors.

There had been one case of scarlet fever, and one case of measles. There had been several serious accidents, and one death from Bright's disease.

The general health of the men and the sanitary conditions have been good.

The Walkerton General Hospital, and the Royal Alexandra were used when necessary.

Doctors Jamieson and Maclaurin, of Durham, Ont., were the district medical officers.

Georgian Bay and Seaboard Railway Branch.—From near Coldwater, Ont., to a point on Hogg bay, Victoria harbour, Ont., about fourteen miles, which is under contract to the Toronto Construction Company. About three hundred men were employed, who were well housed and boarded by the contractors. There had been no serious diseases, accidents or deaths, the general health of the men and the sanitary conditions good.

The hospital at Midland was used when necessary. Wm. B. Boyd, M.D., of Coldwater, Ont., was the district medical officer of the work.

Toronto, Grey and Bruce Railway Branch.—From near Bolton, Ont., to Weston, Ont., about nine miles. This is under contract to Messrs. G. A. Beggy & Co., of Woodbridge, Ont. There were three camps with about seventy-five men employed, who were well housed and boarded by the contractors.

There had been no serious diseases, accidents or deaths.

P. D. McLean, M.D., of Woodbridge, Ont., was the district medical officer.

CANADIAN NORTHERN RAILWAY.

Toronto-Sudbury Branch.—From north of Canadian Pacific Railway crossing to Hutton and Sudbury. Angus Sinclair, C.E., of Parry Sound, is the contractor for this work, which is now composed of tracklaying and ballasting. About three hundred men were employed, who were housed in boarding cars, and well boarded by the contractor.

There were no contagious diseases, one serious accident, man run over by train, and one death.

The general health of the men was excellent. There was a hospital at Sudbury, which was used if necessary.

R. B. Struthers, M.D., of Sudbury, was the district medical officer in charge.

This work is about completed.

Key Harbour Camps.—Angus Sinclair, C.E., is the contractor for tracklaying, ballasting, bridge construction, &c. From three to five hundred men were employed, who were well housed and boarded by the contractor.

There were no contagious diseases, four serious accidents and five deaths, but the general health of the men was good.

The Parry Sound General Hospital was used when necessary.

W. N. Robertson, M.D., was the resident district medical officer.

This work is about completed.

CENTRAL ONTARIO RAILWAY.

Bancroft to Maynooth, Ont.-Whitney extension of about twenty-eight miles. W. G. Gibson, of Port Hope, Ont., is the chief contractor, and the company are doing a small portion of the work themselves. About two hundred men were employed thereon, who were housed in shacks or wood buildings erected by the company along the line, or in farm houses and boarded by James Robinson on contract. The health of the men had been good, and no contagious or infectious diseases developed. There had been no deaths or serious accidents. Tents and houses were provided for temporary accommodation, and the Belleville General Hospital was used in case of necessity.

The water supply was from springs, and was very good. Latrines were provided in suitable locations and the general sanitary conditions of the camps were good.

A. T. Embury, M.D., of Bancroft, is the district medical officer of this work.

CANADIAN NORTHERN QUEBEC RAILWAY.

Montford Branch.—From Junction with main line near St. Jérome, Que., to junction with the Montford and Gatineau railway, about sixteen miles. This work was carried on by Messrs. Mackenzie, Mann & Co., of Toronto, who sublet the same to Messrs. O'Brien & Mullarky, of Montreal, and they again sublet it in four divisions, to the following contractors: T. Kert, Morrison, Bonneville and Mulhern, and McDonald & Sunstrum. There were four camps, and three hundred and forty men were employed, who were housed and boarded in tents and wood shacks by the sub-contractors. There had been two cases of typhoid fever, one serious accident, and no deaths. The general health of the men, the water supply, and the general sanitary conditions of the camps were good. Temporary tents were provided for hospital use, and a Montreal hospital used in case of necessity.

D. Berthiaume, M.D., of St. Jérome, Que., was the district medical officer of the work.

This work is now completed.

Extension of Main Line.—From near Shawinigan to Quebec city, about eighty-six miles. This work is also being carried on by Messrs. Mackenzie, Mann & Co., of Toronto, who have contracted with Messrs. O'Brien & Mullarky, of Montreal, for the construction thereof, and the latter have sublet parts thereof to four sub-contractors, viz., Bamfield, McManus, Sorret and S. Maloney. There are four camps, one at St. Casimir, one at St. Anne, one at St. Prospère, and one at St. Stanislas, in the county of Champlain. About two hundred men were employed in all, about one hundred of them being housed and boarded in tents and buildings by the sub-contractors, the remainder boarding with surrounding farmers. There had been no contagious or infectious disease, no deaths, and only one accident. The general health of the men, the water supply, and the sanitary conditions were good. Hospital quarters were provided in case of urgency, but one of the Montreal hospitals would be used in case of necessity. Rosario Frigon, M.D., of St. Casimir, was the district medical officer of the first three camps, and Ferdinand Trudel, M.D., of St. Stanislas, the district medical officer of the camp there.

This work is well advanced towards completion.

La Tuque Branch.—From La Tuque Junction to La Tuque village, about forty-two miles. This work had been under construction for some time, and is under contract to Mr. Joseph Paquette, who sublet the northwestern portion to Messrs. O'Brien, Fowler & Co. Four to five hundred men were employed, who were housed in good permanent buildings, and were well boarded by the sub-contractor. The general health of the men had been excellent, the water supply of the very best, and the sanitary conditions of the camps good.

There had been no contagious or infectious disease, no deaths, and only one accident. Latrines were supplied at the permanent camps.

The General Hospital at Quebec was used if necessary.

A. B. Camison, M.D., was the district medical officer for the sub-contractors. This work has been completed and trains are being operated by Mr. Joseph Paquette, the main contractor.

In closing this my report for the twelve months ended March 31, 1908, I am pleased to again be able to draw your attention to the abatement of contagious and infectious diseases (with the exception of typhoid fever), the general healthfulness of the men, the good sanitary conditions of most of the camps at said works, and the attention given by the companies, contractors, sub-contractors and medical officers in trying to comply with the requirements of the regulations under the Public Works Health Act, 1899.

I have the honour to be, sir,
Your obedient servant,
CHAS. A. L. FISHER,
Public Works (Health) Inspector.

The Honourable
The Minister of Agriculture,
Ottawa.

No. 14.

(F. F. Chamberlin, M.D.)

Toronto, April 4, 1908.

Sir,—I beg to submit my report for the year ended March 31, 1908, as to the condition of health of men employed on Public Works, west of Winnipeg, as required by the Public Works (Health) Act. Compared with last year, there has been a marked improvement in the health of the men employed on railway building and the sanitary conditions of the camps. This season having been an excellent cool one, better facilities for obtaining a purer supply of water for all purposes, and the contractors having given more attention to destroying camp garbage, together with a better supply of medical attendance along most of the lines of the work, has tended to produce this result. The present conditions of the Public Works (Health) Act, are such that it is, and will be difficult to strictly enforce it until amended so that it will meet the conditions existing in railway construction. The constant shifting of camps from place to place, the large number of sub-contractors, few men employed at many of the camps, and the distances between them, make it difficult to supply proper medical attendance, and to enforce proper sanitary conditions. The sub-contractors have nothing to say, or control over medical work, and as a result in many cases the men requiring medical aid do not get it unless the sub-contractor at his own expense calls the nearest medical man he can obtain, and pays him for his services, taking his chances of being reimbursed by the

railway company, the general contractor or the medical officer who supplies medical attendance, which is not always done owing to the late spring, and wet weather grading work did not commence until about May 15, some of the contractors not having their camps established at that date. My report of June 24, of my first inspections, gives conditions of the camps of the Canadian Northern Railway, from Brandon to Regina. At Brandon and west there were 120 men track-laying. This work was being done by the company. The Cowan Construction Company have the contract for grading from Brandon to Regina. They sublet to various parties who in turn sublet again.

First camp west of Brandon, Doctor Willmouth, sub-contractor from Cowan Construction Company	45	men.
Camp 2, Cowan Construction Company	50	"
Camp 3, Cowan Construction Company	80	"
Camp 4, Cowan Construction Company	20	"
Camp 5, Simpson & Craig, sub-con. from C. Con. Co.	70	"
Camp 6, McQuinn Co., sub-con. from Simpson & Company.	17	"
Camp 7, Mead & Co., sub-con. from Simpson & Craig	20	"
Camp 8, Reder Bros., sub-con. from Simpson & Craig.	35	"
Camp 9, P. Bennet, sub-con. from Simpson & Craig	6	"
Camp 10, Rock & Co., sub-con. from Simpson & Craig.	10	"
Camp 11, Fred Swan & Co., sub-con. from Simpson & Craig.	50	"
Camp 12, J. A. Munson, sub-con. from Cowan & Co.	50	"
Camp 13, J. A. Munson, sub-con. from Cowan & Co.	15	"
Camp 14, Neil Keith, sub-con. from Cowan & Co.	80	"
Camp 15, Wm. Hill, sub-con. from Neil Keith.	7	"
Camp 16, Wm. Hill, sub-con. from Neil Keith.	12	"
Rossburn Extension C.N.R., Contractors Cowan Con. Co. who sub-let to Peter P. Black.	40	"
R. D. McLean, sub-con. from Peter P. Black.	18	"
Watt & Bronstia, sub-con. from Peter P. Black.	25	"
McDougall, sub-con. from Cowan Construction Co.	30	"

There are about 20 or 25 men on the Canadian Northern line north from Prince Albert line, called the Hudson Bay or Fort Churchill Road, commencing at a place called Etomami. This road is built for some 50 or 60 miles north. There is very little difference, if any, in the sanitary conditions existing at all these camps.

There have been no serious cases of sickness or injury up to time of inspection, slough water is used for all purposes, but as soon as the weather gets warm they intend to dig wells. At the present time this slough water is cold, and in many places running. The food is good and well cooked. The men are housed and fed by the contractors, and are charged 75 cents per month for medical attendance, and I am told in some cases $1 per month is charged in place of 75 cents. No hospital tents, and no latrines are provided as yet. No resident doctors. Doctor Cockrin, who resides at Maryfield on the C.P.R. convenient to camp at mileage 85 from Brandon, has been called a few times to see sick in Simpson & Craig's camps. On the Rossburn extension, Doctor Evans of that place is employed by Doctors McKenzie's, of Winnipeg, to attend the sick or injured at the camps in that locality. He receives 35 cents from each man in the camps, and Doctors McKenzie's, 40 cents. I left cards, copies of the Health Act at all the camps. My second inspection to the C.N.R. camps later in the season, and reported on October 4, 1907, east from Brandon. Track laying pretty well advanced, this work being done by the railway company, the men are housed and fed in box cars, which in every way were very comfortable. No sickness reported.

At the grading camps the men are housed and fed in tents, considerable fault finding by the men, and sub-contractors with the medical attendance; of late a number of local doctors have been employed by Doctors McKenzie's, of Winnipeg, chief medical officers of the company, the men being charged 75 cents per month.

The first grading camp, Clark & Wright, sub-contractors from Cowan Construction Co.	18 men.
Camp 2, Swan & Caughy, sub-con. from C. Con. Co.	30 "
Camp 3, McFadden & Cadden, sub-con. from C. Con. Co.	10 "
Camp 4, Simpson & Craig, sub-con. from C. Con. Co.	60 "
Camp 5, E. H. Palmer, sub-con. from C. Con. Co.	6 "
Camp 6, Rider Bros., sub-con from C. Con. Co.	16 "
Camp 7, Edwards, sub-con. from C. Con. Co.	24 "
Camp 8, Dolman, sub-con. from C. Con. Co.	28 "
Camp 9, Mr. Munson, sub-con. from C. Con. Co.	28 "
Camp 10, Mr. Keiff, sub-con. from C. Con. Co.	75 "
Camp 11, Mr. Bell, sub-let from C. Con. Co.	42 "
Camp 12, Mr. Quinn, sub-con. from C. Con. Co.	20 "
Camp 13, Mr. Governin, sub-con. from C. Con. Co.	16 "
Camp 14, Bridge & Co., sub-con. from C. Con. Co.	40 "
Camp 15, Cowan Co., No. 1.	75 "
Camp 16, Cowan Co., No. 2.	60 "

In track laying and grading there are between seven and eight hundred men employed. I attach hereto synopsis of the report sent to me by Doctors McKenzie, of Winnipeg, as to the number of local doctors employed, medical, surgical and other statistics during the past year.

Doctors McKenzie and McKenzie report:—

Doctors employed	12
Medical cases—	
Typhoid fever	2
Pneumonia	3
Smallpox	2
Usual number of colds, rheumatism, bronchitis.	
Surgical cases—	
Fracture of leg	4
Fracture of ribs	1
Minor cases not given.	
Operations—	
For typhoid perforation	1
For hernia	2
For varicocele	1
Deaths from accidents	3
Deaths from diseases	1

CANADIAN PACIFIC RAILWAY.

Early in the season I drove over the line of the Canadian Pacific Railway and visited the camps from Sheho to Lanagan, Saskatoon and Battle river, on the short line to Wetaskiwin; from Battle river to Wetaskiwin the road is completed, and the bridge across the river well under way; there was very little sickness at any of the camps, and the sanitary conditions of the camps was fairly good, this may also be said of the work on the main line from Calgary to Swift Current, the Stressberg line, north and west of Moosejaw, there was no work on line west of Edmonton during the season. Starting from Sheho west the first camp.

Mr. G. K. Hargrave's contractor, J. G. Reid, engineer, 65 men. Hargrave's contract extends some 60 miles towards Lanagan Junction, where it intersects the Stressberg line. He sub-lets to various parties.

1st camp, his own	65 men.
2nd camp, sub-contractor, Mr. Hallam	20 "
3rd camp, sub-contractor, Mr. Zimer	3 "
4th camp, sub-contractor, Mr. Lindsay	43 "
5th camp, sub-contractor, Mr. Patterson	6 "
6th camp, sub-contractor, Mr. Whilsel	5 "
7th camp, sub-contractor, Mr. Finlay	20 "

The men at these camps are housed and fed in tents. Up to the present time, no doctor has visited these camps. There is no sickness, well and slough water is being used. No latrines; men charged 75 cents per month for medical attendance. Food good, no camp hospitals. Camp 8, which is one mile east of Lanagan Junction, P. R. Lambe, contractor; only a few men employed. Dr. Kidd, of Lanagan, attends the sick. There has been one case of typhoid fever. Well water is used. Men are housed and fed in tents, no hospital; food good. No proper latrines. Dr. Kidd also attends to men at the camps west of Lanagan Junction for 25 miles south on the Stressburg line for 25 miles. He has a shack hospital and nurse at Lanagan. Dr. Kidd is employed by Dr. William Black, of Winnipeg, who has part of the medical work of the C.P.R.

At camp 1, west of Lanagan, Mr. W. B. Neel, sub-contractor, 25 men; 2nd camp, O'Neil, 12 men; 3rd camp, Mr. Bishop, 20 men. Those latter parties sub-let from Mr. Lambe. West from this point the British Columbia Construction Company are the contractors. The camps just mentioned are moving very frequently and are all in about the same sanitary condition, having the same medical attendance as at the other camps east.

Camp No. 4 west of Lanagan, Mr. McLean, sub-contractor, from the British Columbia Company, 25 men.

Dr. Kidd, of Lanagan, attends those camps, and Dr. Humphries, also of Lanagan, takes the work west from this point to Saskatoon. There is practically no difference in the condition of any of those camps, the men are charged 75 cents per month for medical attendance, and the doctors visit the camp once a week. Very little sickness at those camps; few complaints.

I posted at all those camps from Sheho westward copy of the health regulations so that all parties may see what the law requires.

Coming south from Lanagan Junction on the Stressburg line we have Mr. Thomas' camp No. 1, sub-contractor from Mr. Lamb, 5 men.

Second camp, Mr. Lamb's own, 40 men.

Third camp, Croston Green, 5 men.

Fourth camp, Mr. Gundelin, 7 men.

Fifth camp, Lavergne, 9 men.

Sixth camp, MacLeod, 14 men.

Seventh and eight camps, British Columbia Construction Company, 35 and 30 men. At those camps the men are charged $1 per month for medical attendance. No proper latrines at the above camps. No hospitals, well water. Men housed and fed in tents. Food good. Very little sickness. Dr. Kidd, of Lanagan, is supposed to attend the men at those camps.

There are 120 men at Govan, track-laying. From that point north to Lanagan Junction. They have had no doctor at those camps up to date, July. The men are housed and fed in tents and box-cars. The men made many complaints on account of no doctor and being compelled to pay $1 per month. Dr. Black, of Winnipeg, promised me to attend to sending a doctor to this point at once, and I understand he has done so. The sick are taken to Brandon hospital. The track-laying is being done by the C.P.R. Co. themselves under the management of Mr. Arthur Williams, as general foreman.

The next camp is at the gravel pit, 30 men employed. Near Stressburg, 130 men are at work on the extension and they are housed and fed in box-cars; have had very

little sickness; no regular medical attendance, no hospitals, and have not been as careful of the disposition of their garbage as they should have been. This has been remedied since, I am informed.

The next camp south is at Lipton, a supply camp of 18 men. The men at those camps complain as to their medical attendance. Dr. Black, of Winnipeg, tells me that he has provided better medical attendance since my visits at the camps, as well as attending to the sanitary conditions of the cars. He has a Mr. Smith, an undergraduate of medicine at Govan, who is supposed to attend the sick south on the line to this point, but at the time of my visits he had no medicines or appliances for attending to the sick or injured.

The C.P.R. Toulon extension from Winnipeg to west side of Winnipeg Lake, J. D. McArthur, contractor. W. A. Mannaix has the sub-contract from them and has 30 men employed grading. This work is being done by shovels and hand barrows, as it is in a muskeg and horses cannot be used. They have had no sickness; well and slough water is used, no doctors, no hospitals, no latrines.

Moosejaw extension of C.P.R. P. R. Lamb & A. C. Smith, contractors; N. W. Butterfield, engineer. The steel is laid to Tuxford, 15 miles north of Moose Jaw. Grading north by W. J. Slater, who sub-lets from Lamb. Has 20 men. Kent & Brown sub-let from Smith, have 35 men. There are two or three small camps of four or five men each, and they are also sub-contractors. Dr. Knight, of Moose Jaw, looks after the medical work. He is employed by A. C. Smith, and is a good man. Dr. J. H. Storey, of Tuxford, assists Dr. Knight west from Tuxford. The men are housed and fed in tents, food is good. Well water is used, no hospital or latrines up to this date. Dr. Knight is now having them provided. The men have not been charged anything up to date, but will be at the end of this month, July. There has been very little sickness at those camps.

On the C.P.R. extension from Boston to Wolseley, J. D. McArthur, contractor. There are three camps south of Wolseley, Dutton & Smith, sub-contractors; 36 men at the first camp. As there are five cases of typhoid fever at this camp, the doctor has ordered the company to move their camp some distance east. The sick cases are in tents and attended every day by Dr. Cook, of Wolseley. They are getting along well The doctor is employed by Tunson & Dutton.

Second camp, A. G. Young, sub-contractor, 30 men.

Third camp, William Shultz & Son, sub-contractors, 40 men. Very little sickness at those camps to the present time. Dr. Cook looks after the medical work very well. The men are charged 75 cents per month for medical attendance. Housed and fed in tents, food is good, well and slough water is used. No hospital tents. This work will be completed in about 15 days to Wolseley.

The C.P.R. east of Saskatoon to Lanagan Junction is grading, three miles east there are 21 men, 6 miles, 23 men. Mr. Miller sub-contractor from British Columbia Construction Company. Doctor visits those camps once in every week or two weeks, or whenever sent for. Eleven miles east the British Columbia Construction Company have a camp of 40 men. Dr. Humphries attends the men at this camp. I am told he is an undergraduate and lives at Lanagan. No hospital tents, pit latrines. Very little sickness, men are housed and fed in tents, are charged a dollar per month for medical attendance, well water is used. Nineteen miles east of Saskatoon, Mr. Rolison, sub-contractor, from B. C. C. Co., 27 men. There was no doctor at those camps during May and June, but three times in July. Men complain that doctors do not come to the camps. Very little sickness.

The next camp is Mr. Terney's, with a sub-contractor from Canadian White Company, 50 men. No hospitals or latrines. Men charged $1 per month for medical attendance. Dr. Humphries visits the camp, but at no regular period. There was one case of measles and one of erysipelas. The men complain as to monthly payment and the attendance given.

The next camp is Finches, 27 men. Good camps, well water, good food. Dr. Humphries attends twice a week. Have latrines. No hospital camp.

Mr. Richard's camp, 50 men, sub-contract from B. C. C. Co. Mr. Merner, camp 25 men. Mr. Madden's, 35; Mr. McLean's, 18; Mr. Lamb, 60 men; sub-contractors from the B. C. C. Company. Drs. Kidd and Humphries, of Lanagan, attend at those camps pretty regularly. No complaints by the men, very little sickness. There is practically no difference between those camps and those previously inspected.

West of Saskatoon, on the C.P.R. line, the steel is laid to Askwith. J. D. McArthur is contractor and sub-lets to other parties. Andre Paulo acts as foreman of Mr. McArthur's camp No. 2., Mr. Dubuc is resident engineer. This camp is moving this week.

Camp No. 1, J. D. McArthur, 36 men. Dr. Parkinson attends those camps and visits them once a week. There has been no sickness, the camps are in very good condition, well water is used.

Camp No. 3, McArthur's, 42 men, very little sickness, no hospital tents. Men are attended by Dr. Parkinson and are charged 75 cents per month. A hospital tent is being put up at camp No. 3 to-day.

C. J. Cameron, a sub-contractor from J. D. McArthur, 13 men; no hospitals, no latrines. The men are housed and fed in tents, charged 75 cents per month for medical attendance. The doctor has only been at this camp once. Work started May 27.

Jos. Dandlin, sub-contractor from McArthur, 19 men. They use well and slough water. Men are housed and fed in tents, no hospitals, earth pit, no doctor at this camp for two months.. Sick are sent to Battleford, 35 miles. Men are charged 75 cents per month.

Henry Thacker, sub-contractor for McArthur, 19 men. No hospitals, no latrines, well water, men housed and fed in tents. Dr. N. D. Mather, of Hardstay, comes to the camps two or three times a month. Men are charged 75 cents a month. This camp is situated at Round Valley, where this road and the Grand Trunk Pacific run side by side for a number of miles.

Whitkles & Stevenson, sub-contractors for McArthur, 8 men. Dr. Mather also attends this camp two or three times a month. Well water, no hospital, one latrine. This camp is in section 24, township 24, range 26, east of the 4th meridian, and a little west of the Grand Trunk Pacific crossing, east of Battle river.

GRAND TRUNK PACIFIC RAILWAY.

Construction work from Portage La Prairie to Edmonton.

The men employed upon this work have been better supplied this season with medical treatment and attendance (under the direction of Doctor Hutchinson, chief medical officer of the company. There has been an improvement in the sanitary condition of the camps, especially in the camps managed by Foley Bros., contractors. There has been some grading work done between Winnipeg and Portage la Prairie; from there west steel is laid, and ballasting done to the McDonald & McMillan section, some 800 men being employed at this work; they are housed and fed in box cars, fitted up for that purpose at different points. McDonald & McMillan, contractors, have a considerable amount of grading to do, and bridge building through the Touchwood Hil's, west of Portage la Prairie. The company used cars for sleeping, eating and hospital accommodation.

The cars are kept in very good sanitary condition. Well water, food good. Drs. McCloud and Little, well qualified, are on the works. Good latrines. A few cases of typoid fever which were taken to the Portage la Prairie hospital. The men are charged 75 cents per month for medical attendance. At the gravel pit, part of the men are housed in tents. East of Saskatoon, first camp, Mr. Lake, sub-contractor, from the Canadian White Company, 55 men. He has 30 miles of grading. Earth pit latrine. Very little sickness. Dr. Peterson, of Saskatoon, attends the men, and visits the camp once in one or two weeks. Well water used. Men are housed and fed

in tents, which are very good. Food good. No complaints by men. Next camp is Mr. S. Farrel, sub-contractor from the Canadian White Company; 50 men. Mr. Farrell sub-let to F. Pratt, S. C. Dame and John Tate. S. Farrell has another of his own camps, east, with 117 men. Mr. Rote, Mr. Burridge, Graham and Talling and Mr. Thersin; 320 men in all. Drs. Genlmette, Crosby and Bryce attend the men at all these camps. Earth pit latrines at most of the camps. Men are housed and fed in tents. Very little sickness. Well and slough water used. Good food. No complaints.

West-of Saskatoon. 1st camp, Mr. Jackson, sub-contractor from Foley Bros., 42 men. Good camp. Well water. Men housed and fed in tents. Food good. Have latrines. Not much sickness. Dr. Roberts attends the men and goes to the camp once a week. Is paid $50 per month. His headquarters at Foley Bros.,

Camp No. 5.—Men charged 75 cents per month. Has a small tent which is called a hospital at this camp.

Camp No. 2.—Pile driving, 6 men.

Camp No. 2.—Jackson's, 31 men. Dr. Roberts attends once a week. Good camp and latrines. Well water. Housed and fed in tents. Very little sickness.

Camp 3.—Mr. Stockey, sub-contractor from Jackson, 18 men. Dr. Roberts attends. Men complain that doctor does not come when required or at regular periods. A few cases of sickness. They are housed and fed in tents. Well water. No hospital. One latrine.

Camp 4.—Tomkins & Taplin, sub-contractors from Jackson, 20 men. Well water. No latrines. No hospital. Dr. Robert vistis the camp once a week. No complaints. Moving camp this week to Round Valley.

Foley Bros. camp No. 4.—31 men. Housed and fed in tents. Very little sickness. Dr. Roberts attends once a week. Men charged 75 cents per month. Earth pits. Those camps are in Eagle Hill country. The C.P.R. line from Sheho to Wetaskiwin runs close beside the G.T.P. line for a number of miles.

Foley Bros. camp No. 5.—49 men. Housed and fed in tents. Dr. Roberts attends. His headquarters is at this camp. Spring water used. Good food. Small hospital tent. Earth pit latrines.

Foley Bros. No. 1.—40 men. Housed and fed in tents. Spring water. Earth pit latrine. Dr. Roberts attends.

Foley Bros. camp No. 3.—30 men, housed and fed in tents. Well water. Good food, earth pit. The sick or injured at this and previous camp are sent to Battleford hospital for treatment, 40 miles. The doctor has been once to this camp. Not much sickness.

Foley Bros. camp No. 2.—46 men. Housed and fed in tents. Well and lake water. No hospital. Earth and pit latrines. Dr. Middlemiss attends the camp for 50 miles. He is located near camp No. 6, of Foley Bros. He attends the work very well and visits the camp once a week. Little sickness. Men pay 75 cents per month. At this point the Grand Trunk Pacific line crosses the C.P.R. line, under it to the north side.

Foley Bros. camp No. 10, 47 men. Housed and fed in tents. Well water. No hospital, no latrines. Dr. Middlemiss attends once a week. Not much sickness.

P. C. Hanson's camp, sub-contractor from Foley Bros. at Round Valley.—44 men. Housed and fed in tents. Spring water. One latrine. No hospital. Dr. Middlemiss attends once a week. Very little sickness. This camp is located in the Sand Hills country.

Morin & Boget, sub-contractors from Foley Bros.—10 men. No hospital or latrines. Housed and fed in tents. Dr. Middlemiss attends. Well water. Good food. No sickness.

Foley Bros. camp No. 9.—69 men. Housed and fed in tents. Well water. Food good. Dr. Middlemiss attends once a week. Not much sickness. No hospital. Earth pit latrines.

William Dumpster, sub-contractor for Foley Bros.—2 men.

Hanson & Co., sub-contractors for Foley Bros.—10 men. Dr. Middlemiss attends. No hospitals. Pit latrines. Men housed and fed in tents.

Foley Bros. camp No. 6.—53 men. West of this camp, 1 mile, Dr. Middlemiss has a hospital. Lake water. Men housed and fed in tents. One latrine. Doctor visits this camp once a week.

Foley Bros. camp No. 11.—48 men. Housed and fed in tents. Well water. No hospital. One earth pit latrine. Dr. Middlemiss visits once a week. Food good. No complaints.

Foley Bros. camp No. 8.—Men housed and fed in tents. Good water. Dr. Williams attends the men. He goes over 60 miles. Earth pit latrines used. Has hospital at Battle River. Men charged 75 cents per month. Very little sickness.

G. M. Collander, sub-contractor for Foley Bros.—30 men. Housed and fed in tents. Dr. Williams visits the camp once a week. No hospital. One latrine. There are two or three small sub-contractors from this point to Battle river. The Foley Bros. camps are all very good and well looked after by their foreman. Most of those camps which I have inspected east of Battle river will soon be moved to the west side, between that and Edmonton.

East of Edmonton, at Clover Bar, Dr. Ducklow, sub-contractor from S. Jackson, has a camp.—40 men. Housed and fed in tents. Well water. Earth pits. No doctor. No hospital. No sickness. Men have not yet been charged, but will be for the month of July. I left cards. Dominion Health Act, at all of the camps.

The Interior Department of Canada have some 30 men working, building roads and bridges, &c., at Elk Park, southeast of Fort Saskatchewan. Men are housed and fed in tents. No sickness. No doctor. No hospital. No latrines. Well and slough water.

Dr. Hutcheson, chief medical officer of the Grand Trunk Pacific Railway, at Montreal, has and takes full charge of the medical work on this road. He has Dr. Lenay, of Winnipeg, and Dr. Hyslop, of Edmonton, assisting him.

I attach synopsis of Dr. Hutchinson's report to me, as to sickness, accidents, deaths, doctors employed, contractors, sub-contractors, and number of men employed on the railway works during past year.

I have the honour to be, sir,
Your obedient servant,
T. F. CHAMBERLAIN, M.D.

The Honourable
The Minister of Agriculture,
Ottawa.

Dr. Hutchinson's report G.T.P. Railway:—

Sickness—		
No. of cases		974
Injuries—		
No. of cases		328
Deaths—		
Pneumonia	4	
Typhoid	4	
Heart disease	1	
Acute rheumatism	1	
Sudden	2	
Drowned	1	
Shot	1	
Lightning	1	
Dynamite	1	
	—	16
No. of doctors employed		24

MISCELLANEOUS

No. 15.

REGULATIONS UNDER THE COLD STORAGE ACT.

1. The Minister of Agriculture may make appointments of inspectors and other persons for the enforcement of the Act.

2. No application shall be considered for any cold storage warehouses except those equipped with mechanical refrigeration, nor any place where any such cold storage already exists or where the proposed cold storage would compete directly with other establishments of the same class.

3. Applications for a subsidy under the Act must be made in the following form, which shall be known as Schedule A.

SCHEDULE A.

No.....

Application for Cold Storage Subsidy.

Application is hereby made on behalf of.. .. .. .

Exhibit 4, sketch showing location of warehouse or proposed warehouse in regard to connection with railway lines and wharfs.

4. The owners of cold storage warehouses in order to secure the subsidy, will be required to maintain the following temperatures therein, for the preservation of the various products mentioned.

Kinds of Produce.	Temperature.	
	Min.	Max.
Apples and other fruits	32	36
Butter		20
Cheese	35	40
Eggs, Meats and Dressed Poultry	30	34
Bacon and Hams	40	45
Fish (Frozen)		20
Meats, Poultry and Game (Frozen)		20
Vegetables	34	38

5. Nothing in these regulations shall prevent owners of subsidized cold storage warehouses from entering into special contracts with customers for the maintenance of temperatures other than those herein specified.

6. The first instalment of the subsidy shall not be paid until the applicant shall have presented proper vouchers for the cost of building, equipment, site and other expenditures.

7. The owners of cold storage warehouses to which the subsidy or any part thereof had been paid, may be required to make an annual report to the Minister of Agriculture in such form as may be described.

No.. . . . . .

Application for Cold Storage Subsidy.

Exhibit 1, to accompany the application by. . . . . .
. . . . . .
of. . . . . .in the Province of. . . . . .for the subsidy offered under *The Cold Storage Act* for the erection of a cold storage warehouse.

Note.—Attach a copy of plans to this sheet.

No.. . . . . .

Application for Cold Storage Subsidy.

Exhibit 2, to accompany the application made by. . . . . .
. . . . . .
of. . . . . .of the Province of. . . . . .for the subsidy offered under *The Cold Storage Act* for the erection of a cold storage warehouse.

Note.—Attach a copy of the specifications of warehouse and insulation to this sheet.

8-9 EDWARD VII., A. 1909

No.. .. ..

Application for Cold Storage Subsidy.

Exhibit 3, being schedule of maximum rates submitted for approval in connection with the application made by.. .. .. .

MISCELLANEOUS

No. 16.

REGULATIONS RELATING TO MANGE.

'Whereas the disease of Mange exists among cattle throughout those portions of the province of Saskatchewan and Alberta which may be described as bounded by the International boundary, the Rocky mountains and a line drawn as follows:—

'A line from the Rocky mountains along the northern boundary of the Stoney Indian Reserve to the line between ranges 5 and 6 west of the 5th meridian, thence north along that line to the line between townships 28 and 29, thence east along that line to the line of the Calgary and Edmonton Railway, thence north along the Calgary and Edmonton Railway to the line between townships 30 and 31, thence east along that line to the line between ranges 26 and 27 west of the 4th principal meridian, thence north along that line to the line between townships 34 and 35, thence east along that line to the Red Deer river, thence north along the Red Reer river to the line between townships 38 and 39, thence east along that line to the 4th principal meridian, thence south along the 4th principal meridian to the Red Deer river, thence along the Red Deer and Saskatchewan rivers to the line between ranges 7 and 8 west of the 3rd meridian, thence south along that line to the line between townships 10 and 11, thence east along that line to the line between ranges 20 and 21, west of the 2nd meridian, thence south to the international boundary line.

'And whereas it is of the greatest importance to the interests of stock owners and to the preservation of a profitable market for western cattle that the policy adopted in 1904 with a view to the eradication of the disease in question should be continued.

'That after careful inquiry and due consideration it has been decided that the period between June 1 and August 15 is the most suitable and convenient for treatment with the above object.

'Therefore the Governor General in Council in virtue of the provisions of section 28 of the Animal Contagious Diseases Act, chap. 75 of the Revised Statutes of Canada, 1906, is pleased to order that the above described tract of land shall be, and the same is hereby declared an infected place, and that all persons owning or being in charge of cattle within the above described tract must, except as hereinafter provided, during the said period, dip or otherwise treat such cattle in a manner satisfactory to the officers of the Department of Agriculture, provision being made that where it can be clearly shown to the satisfaction of the said officers that cattle kept under fence in any well defined area or district within said tract, are not affected with, and have not been in any way exposed to, the contagion of mange, or have been, during the present season, treated in a satisfactory manner and subsequently kept isolated from all other cattle, the Veterinary Director General may, on the facts being reported to him, exempt such area or district from such compulsory treatment, but this provision shall in no case apply to cattle kept on the open range, or on unfenced land.

'Satisfactory treatment shall consist of:—

(*a.*) Immersion for not less than two minutes in a solution of lime and sulphur of a strength of not less than 10 pounds of lime and 24 pounds of suphur to 100 gallons of water prepared according to the directions of the officers of the Department of Agriculture, the fluid to be applied at a temperature of not less than 105° nor more than 110° Fahrenheit, and the treatment to be repeated after an interval of not less than ten or more than fifteen days.

(*b*) Complete immersion in, or thorough saturation by spraying or otherwise, to the satisfaction of the inspector in charge, with an emulsion of crude petroleum, soft water and hard soap, prepared by first mixing these ingredients in the proportion of:—

Crude petroleum	2 gallons
Hot soft water	½ gallon
Hard soap	½ pound

the mixture thus formed to be subsequently diluted with not less than seven nor more than fifteen times its volume of soft water.

'Treatment with crude petroleum or kerosene in any form other than an emulsion as above desribed will not be recognized by the department.

'When approved by the inspector in charge of the district in which the cattle to be dealt with are kept, persons owning or controlling herds of not more than thirty head may be permitted to treat their animals by hand, in which case either the emulsion described above or the following preparation shall be used:—

Sulphur	2 pounds
Oil of tar	8 ounces
Raw linseed oil	1 gallon

'In the event of any owner failing to treat or to make satisfactory preparation for the treatment of his cattle on or before August 1, the provisions of the order in council, dated June 27, 1904, regarding compulsory treatment as quoted below, shall be enforced:—

'"Every veterinary inspector, and every person duly authorized by a veterinary inspector shall have full power to order animals affected or suspected of being affected with mange to be collected for inspection, and, when necessary, to be detained, isolated or treated in accordance with the instructions of the Veterinary Director General.

'"The expenses of, and incidental to such collection, isolation and treatment shall be borne by the owners of the animals, and if advanced by the inspector or other authorized person shall, until paid, be a charge upon the said animals, without prejudice however to the recovery of any penalty for the infringement of these regulations.

'"If such expenses are not paid within twenty days of the time when they have been incurred, the inspector or other duly authorized person may proceed to sell the said animals by public auction after giving the owner ten days' notice in writing of such intention to sell, which notice may be effectually given, where the owner is known, by delivering the same to him personally or by sending it by mail addressed to him at his last known place of residence. Where the owner is unknown, such notice may be effectually given by publication in one issue of a newspaper published or circulating in the district where such animals are detained. The proceeds of such sale shall be applied first in payment of the reasonable expenses of the collection, isolation, treatment, giving of notice and conduct of sale, and the balance, if any, shall be paid to the owner of the said animals on demand. Any balance not so paid shall be remitted to the Minister, and if not claimed within twelve months from the date of sale shall be paid to the credit of the Receiver General."

'The Governor General in Council is further pleased to order that no cattle other than those consigned to Winnipeg or to points in Canada east of Winnipeg, shall be removed or be allowed to move out of the above described tract unless they are accompanied by the certificate of an inspector of the Department of Agriculture, stating that they have been examined by him and have either been found free from contagion of mange, or that they may be shipped for immediate slaughter as hereinafter provided. Any such cattle, however, shall, if deemed advisable by the inspector, be detained, dipped, sprayed or otherwise treated in such manner as the Veterinary Director General may from time to time prescribe.

'No railway company shall accept or load at any point within the said tract any shipment of cattle destined for any point west of Winnipeg or for export to the United States or elsewhere via any point on the international boundary, west of Winnipeg,

unless such shipment is accompanied by the certificate of an inspector as above provided.

'Cattle originating west of Winnipeg, whether within the above described tract, or not, consigned to Winnipeg, or to points east thereof, shall be inspected at Winnipeg, and no railway company shall release such cattle at Winnipeg or load such cattle for re-shipment therefrom until they have been submitted by daylight to an inspector of the Department of Agriculture and certified by him to be free from mange and other contagious or infectious diseases.

'Cattle found on inspection to be affected with mange or other contagious or infectious disease shall be dealt with as may be ordered by the inspector.

'At points where cattle originating in the said district are unloaded, they shall be placed in special yards and such yards shall be used for no other purpose and shall be cleansed and disinfected when so ordered by an inspector.

'All cars and other vehicles used for the carriage of cattle originating within the said tract shall be cleansed and disinfected to the satisfaction of an inspector as soon as possible after being unloaded and before being used for any other shipment.

'All way bills and bills of lading accompanying shipments of cattle originating within the said tract shall have plainly written or stamped across the face thereof a notification that the said cars are to be cleansed and disinfected immediately after being unloaded.

Cattle infected with, or which have been exposed to the contagion of mange, may be shipped for immediate slaughter to points within the above described tract under the following conditions:—

'Unless loaded through special yards and chutes reserved exclusively for such shipments, all yards and chutes used by them shall be declared infected places, and shall not be again used for shipment of healthy stock until cleansed and disinfected to the satisfaction of the inspector; they shall not be allowed to come in contact with other animals; shall be consigned direct only to such slaughter houses within the hereinbefore described tract as are provided with private yards and chutes; shall not be unloaded at any point *en route,* and shall under no pretext whatever be removed alive from the slaughter house or the yards and premises immediately connected therewith.

'Cars conveying such cattle shall be cleansed and disinfected to the satisfaction of an inspector immediately after being unloaded.

The transit of cattle through the said tract is permitted subject to the following regulations:—

'Cattle for transit by rail through the said tract from one part of Canada to another shall, at points where unloading is necessary, be placed in yards reserved for their exclusive use, and shall not be permitted to come in contact with cattle which have originated within the said tract.

'Cattle imported from the United States into the said tract destined for points in Canada outside thereof may, under compliance with the quarantine regulations, and with the provisions of the next preceding section hereof, be permitted to pass without unnecessary delay through the said tract direct to their destination without further restrictions.'

No. 17.

CANADIAN QUARANTINE REGULATIONS.

The whole of the quarantine service of Canada is controlled by the Minister of Agriculture. It is administered under him by the Director-General of Public Health.

Each quarantine station is in the immediate charge of a specially appointed medical quarantine officer.

At each unorganized maritime or inland quarantine station, the local collector of customs is the quarantine officer for the purpose of these regulations.

The Governor in Council may, however, from time to time appoint a temporary medical quarantine officer at any unorganized maritime or inland quarantine station, who shall supersede for the time being the collector of customs as the quarantine officer of the port.

THE QUARANTINE STATIONS.

The quarantine stations of Canada are:—

Province of Quebec—

(*a.*) Grosse Isle, in the River St. Lawrence, with Rimouski, the Louise Embankment and the Grand Trunk wharf at Lévis, as sub-stations.

Province of Nova Scotia—

(*a.*) Halifax, the harbour and Lawlor's Island.
(*b.*) Sydney, the harbour and Point Edward.
(*c.*) Louisbourg and the harbour.

Province of New Brunswick—

(*a.*) St. John, the harbour and Partridge Island.
(*b.*) Chatham, the harbour and Middle Island.

Province of Prince Edward Island—

(*a.*) Charlottetown, the harbour and Keppoch.

Province of British Columbia—

(*a.*) Victoria, the harbour and William Head.
(*b.*) Vancouver and the harbour.
(*c.*) Prince Rupert, the harbour and the Kinnahan Islands.

Every other maritime port, each such port being designated an unorganized maritime quarantine station.

And every inland port on the Canadian frontier, each such port being designated an unorganized inland quarantine station.

GENERAL PROVISIONS.

1. Every quarantine officer at a quarantine station in Canada, and every customs collector in his quality of quarantine officer, shall for the purpose of these regulations be a justice of the peace in virtue of the provisions of section 7 of the Act respecting Quarantine, chap 74, Revised Statutes.

2. Every person entering Canada, whether through a customs port or otherwise, shall be held to be subject to these regulations.

(*a.*) Once a person has been released from this outer ring of Dominion quarantine, he or she passes from under the health jurisdiction of this department.

3. Passengers for the purpose of these regulations are divided into two classes, cabin and steerage. Steerage passengers are those occuping compartments other than those of first and second cabin.

4. The graver quarantinable diseases are; Asiatic cholera, plague, smallpox, typhus fever and yellow fever. The minor: Chickenpox, diphtheria, enteric fever (typhoid), measles and scarlet fever.

(*a.*) In addition to the above recital, it is the duty of every quarantine officer to satisfy himself as to the presence or absence of any other contagious or infectious disease.

5. It is the duty of every quarantine officer to satisfy himself as to the fact of the presence or absence of leprosy among the passengers or crew; and in the event of any case of such disease being found, the person affected shall not be allowed to enter Canada, but shall be detained at quarantine at the vessel's expense until taken aboard by the same vessel when next outward, and in the event of the vessel failing to take back the said leper, he or she shall be deported by the government at the expense of the owners of the vessel after an interval of fourteeen days from the date of the landing of such person unlesss satisfactory reasons be given for further delay.

6. Every vessel arriving from any port outside of Canada at any organized quarantine station shall be inspected by a duly appointed quarantine officer, at the place duly appointed for such inspection, and shall not be allowed to make customs entry at any port in Canada until it has received a clean bill of health from such officer at such place.

(*a.*) If a vessel from an infected foreign port bound for a port in Canada, which is an unorganized quarantine station, has first to pass an organized quarantine station, it shall be held to call at such station before proceeding to its destination.

(*b.*) Within the meaning of these regulations an infected port or country is a port or country where any one of the graver quarantinable diseases above designated exists as an epidemic, or has been communicated to one or more persons through the medium of an infected person, personal effects or otherwise. A port or country is not considered infected when a single case or a small number of cases has been reported, and the disease has not been communicated from such cases.

(*c.*) These regulations shall also apply to vessels arriving at any port in the province of Prince Edward Island from any port in any other province of the Dominion of Canada that has been declared by the Minister to be infected with any of the graver quarantinable diseases.

7. Coasting vessels from Newfoundland and from ports in the United States contiguous to Canada and, in the case of Prince Edward Island, vessels from ports in other provinces of the Dominion of Canada, and free from infectious disease may, from time to time, be excepted from these regulations by order of the Minister of Agriculture.

(*a.*) Vessels from Europe touching at Newfoundland ports on their way to a Canadian port will not be considered coastwise vessels under this regulation.

8. After having made customs entry at any port in Canada a vessel, if she proceed to any other port in Canada without first again going abroad, shall be held and regarded as a coastwise vessel and so not subject to these regulations.

9. His Majesty's ships of war and transports arriving at any port in Canada in a healthy condition are excepted from quarantine inspection and detention; but in the event of the presence on board any such vessel of any of the graver forms of quarantinable diseases as designated in section 4, these regulations shall apply as in the case of other vessels arriving from outside of Canada.

10. It shall be the duty of every pilot on boarding a vessel arriving at any port in Canada to furnish the master of such vessel with a copy of the regulations, under the penalty hereinafter prescribed.

11. Every vessel from any port outside of Canada requiring quarantine inspection shall, on arrival at any port in Canada, display a yellow flag at the fore by day, for a

distinctive quarantine signal, in order to inform the quarantine officer that his services are required, and any such vessel arriving by night shall display a red light at the fore for such signal.

(*a.*) No such vessel shall proceed past the quarantine inspection ground until she has been visited and released by the quarantine officer.

12. Every person who shall be on board any vessel arriving from any port outside Canada at any organized quarantine station, or who shall have gone on board any vessel after such arrival and before such vessel has been inspected by a duly appointed quarantine officer, shall be liable to the provisions of sections 18 and 23, and no such person shall leave such vessel without the permission of such officer until such vessel shall have been declared by such officer free from infectious disease. Any person violating this regulation shall be liable to a penalty not exceeding $400 and imprisonment for 6 months.

The word 'person' as used in this regulation shall be deemed to include customs and revenue officers and other officers or servants of the Crown being on or going on board any vessel so arriving either in the discharge of their duty or otherwise.

13. Every vessel shall be inspected immediately on arrival.

(*a.*) With the exception that in periods of the epidemic prevalence of any of the graver quarantinable diseases, or to meet the special requirements of any particular port, the Minister of Agriculture may direct that inspection shall only take place between sunrise and sunset.

14. Every quarantine officer shall satisfy himself as to the presence or absence of infectious disease by the personal inspection of those on board or by the sworn statement of the captain or surgeon, in the form hereto appended, or by both.

15. Every maritime quarantine officer shall, when infectious disease is found on any vessel, notify the immigration agent of the port of the fact so that that official may complete and forward the schedule list of immigrants by destination to the secretaries of the boards of health in the provinces or states to which such immigrants are destined.

16. Passengers during a period of the prevalence in epidemic form of any of the graver quarantinable disease should be notified by steamship agents to dispense as far as possible with luggage that may be injured by wetting, in case of having to undergo disinfection—such as fabrics of which the dyes are likely to run—as the owners will be compelled to assume all risks of injury.

17. Vessels during a period of the prevalence in epidemic form of any of the graver quarantinable diseases should dispense as far as possible with woollen hangings, curtains, carpets, and upholstering, substituting non-absorbing coverings.

(*a.*) Every vessel carrying cargo, and liable to be disinfected, should have provided a plain frame shaft allowing a clear inside space of 12 inches each way, placed in the main hatch, in a sailing vessel; and one in each hatch of a steamship fitted by bulkheads. The frame work in this shaft to be set before loading and to extend from the hatchway to the bottom of the vessel. This simple arrangement would receive the fumigating pipe and avoid shifting cargo.

18. Every vessel with infectious disease on board, or coming from an infected port or country, shall be liable to be detained at a quarantine station for disinfection or observation, together with its passengers, crew, pilot, &c., luggage and cargo.

(*a.*)A vessel may be detained at quarantine for disinfection during the time necessary for that purpose.

(*b.*) The time during which a vessel, its passengers, crew, pilot, &c., may be detained for quarantine of observation is the accepted period of the incubation of the disease quarantined against from the ascertained date of last possible exposure.

19. When any vessel not originally bound for any port in Canada arrives at any seaport of Canada with contagious or infectious disease on board, and is allowed to remain in quarantine at or near such port, the master of such vessel shall pay to the collector of customs at the port the sum of two dollars, head money, for each person

on board said vessel at the time of her arrival; and the said sum shall be a lien on the vessel, and shall be paid before she shall be allowed to leave the port. R.S., c. 74, s. 11.

20. The master of any such vessel shall, before bulk is broken, have the right of putting to sea with such vessel, instead of allowing her to be quarantined, and if this right is exercised, and the vessel has not arrived at her port of destination, the bill of health shall be returned after the inspecting physician has mentioned thereupon the length and circumstances of the detention and the condition of the said vessel on her putting to sea; Provided always, that before the exercise of such right by the master of such vessel, the inspecting physician shall satisfy himself that the sick of the vessel will be taken care of during the remainder of the voyage; and if any of the sick prefer to remain at such port the said physician shall take care of them. R.S., c. 74, s. 12.

21. Every vessel provided with an isolated hospital for men and another for women, on the upper deck, ventilated from above and not by the door only, may, if the quarantine officer is furnished with satisfactory evidence that such hospital accommodation has been promptly and intelligently made use of, be allowed to proceed after the landing of the sick and those who in the judgment of the quarantine officer may have been immediately exposed to infection, and the disinfection of such parts of the vessel as he may judge to require it; any vessel, however, arriving with any infectious disease, without having such special isolated and ventilated hospital accommodation, or if having it, without satisfactory evidence that it has been prompty and intelligently made use of, shall be liable to be detained for disinfection at a quarantine station.

22. Any vessel detained by order of the quarantine officer shall forthwith be anchored or moored in such position as the quarantine officer shall direct, and its passengers, crew, pilot, &c., shall be retained on board or landed at quarantine as the quarantine officer shall direct.

23. And whilst such ship is so detained no person shall leave the same, nor shall communication be allowed with such vessel, without permission from the quarantine officer.

24. The quarantine officer detaining any ship as aforesaid shall immediately notify the Minister of Agriculture, stating the cause of such detention.

25. In the case of a vessel carrying His Majesty's mails and arriving by the St. Lawrence, clearance certificate shall be from a quarantine officer at Rimouski (or at any other port designated by the minister) or at Grosse Isle, and in the case of every other vessel from Grosse Isle only unless special permission to the contrary be obtained from the Minister of Agriculture.

(*a.*) In the event of his finding a quarantinable disease on board the quarantine officer at Rimouski (or any other port designated by the minister) shall withhold the final clearance for customs entry which shall only be given to the vessel when she has been released after quarantine inspection at Grosse Isle.

(*b.*) When, however, in the judgment of the quarantine officer at Rimouski (or at any other port designated by the minister), mails and persons and their effects may be permitted to land at Rimouski (or at any other port designated by the minister) from such a vessel a partial clearance shall be given by such quarantine officer covering only the mails and the persons allowed to land there with their effects. (*Vide* Form appended hereto.)

(*c.*) With the exception that during a time of epidemic prevalence of one of the graver quarantinable diseases the permission to a mail steamer from an infected port or country to land passengers at Rimouski (or at any other port designated by the minister) may be suspended by direction of the Minister of Agriculture.

(*d.*) And, in such conditions, the mails only to be landed at Rimouski (or at any other port designated by the minister), and the vessel to proceed to Grosse Isle for inspection.

(*e.*) In the event of a graver quarantinable disease having occurred on board a vessel during the voyage and where in the judgment of the quarantine officer the outer bags containing mail matter may have been exposed to infection, they shall be left on board the vessel for disinfection at Grosse Isle.

(*f.*) The quarantine officer at Rimouski (or at any other part designated by the minister) shall telegraph a statement of action taken and the disease for which full clearance is withheld to the quarantine officer at Grosse Isle.

26. With regard to vessels touching at Halifax on their way to St. John, when, after inspection, the quarantine officer at Halifax finds a vessel healthy he shall give a full customs clearance which shall be valid at the port of St. John, and the vessel shall then proceed there coastwise.

(*a.*) In the event of his finding a quarantinable disease on board the quarantine officer at Halifax shall withhold the final clearance for customs entry which shall only be given to the vessel when she has been released after quarantine inspection at St. John.

(*b.*) When, however, in the judgment of the quarantine officer at Halifax mails and persons and their effects may be permitted to land at Halifax from such a vessel a partial clearance shall be given by the quarantine officer at Halifax covering only the mails and the persons allowed to land there with their effects. (*Vide* Form appended hereto.)

(*c.*) The quarantine officer shall telegraph a statement of action taken and the disease for which the full clearance is withheld to the quarantine officer of the port of St. John.

27. Any steam tug or other vessel which shall have towed or otherwise communicated with any vessel of the class of vessels subject to quarantine or quarantine inspection shall thereby be held to the same regulations and requirements as apply to the vessel communicated with.

(*a.*) If the communication between the vessel and the steam tug is confined to attachment of a rope, afterwards loosed, the quarantine officer may decide to release such tug from quarantine detention.

28. Rags coming from a port or country in which infectious disease prevails may be prohibited, and the name of any port or country so infected shall, from time to time, be published in the *Canada Gazette.*

(*a.*) Rags arriving from prohibited ports at a quarantine station shall be liable to be burnt or otherwise treated on the order of the Minister of Agriculture based on a report of the quarantine officer.

29. New merchandise in general may be accepted without question.

VACCINATION.

30. Every passenger shall be required to furnish evidence, to the satisfaction of a quarantine officer, of having been vaccinated, or of having had the smallpox.

(*a.*) Every person not showing satisfactory evidence of having been vaccinated, or of having had smallpox, shall be vaccinated by a quarantine officer or detained under observation.

31. The production of an endorsement of the passenger's ticket, signed by the ship's surgeon, to the effect that the passenger has been successfully vaccinated, and the ship's surgeon's testimony under oath verifying the truth of such certificates or endorsements, may be taken by a quarantine officer as evidence of such vaccination and protection. Such quarantine officer shall, however, from time to time, make personal examination of holders of such certificates to satisfy himself of the manner in which they have been issued.

(*a.*) The ship's surgeon shall make examination of each steerage passenger as to his or her vaccinal protection as soon as possible after the vessel leaves the port of departure and shall endorse the result of such examination on the passenger's steamship ticket as follows:—

'Protected by previous vaccination or smallpox,'

'Vaccinated on board,' or

'Refused vaccination.'

(*b.*) In the event of smallpox having occurred on any vessel, or of the arrival of any vessel from any port or place which has been declared, by proclamation in the *Canada Gazette,* infected with smallpox, every person on board not showing satisfactory evidence of having been vaccinated within seven previous years, or of having had the smallpox within that period, shall be vaccinated by or under the supervision of the quarantine officer or detained under observation.

(*c.*) Persons who are found by the quarantine officer to require vaccination under the above regulations and who refuse to submit to it shall be landed at the quarantine station subject to detention for observation, and the maintenance of such persons and the pay and the maintenance of such guards as it may be necessary for the quarantine officer to appoint to look after and control them during their detention shall be a charge against the vessel.

(*d.*) In the case of persons so detained from a healthy vessel the period of detention shall be 18 days, such being taken as the ordinary period of incubation dated from possible infection at the port of departure, and in the case of persons from a vessel in which smallpox has occurred during the voyage the eighteen day period of detention shall date from the landing at quarantine of the persons refusing vaccination.

(*e.*) A vessel arriving at any quarantine station in Canada will be less liable to detention if the vaccination of all steerage passengers not showing proof within seven years is insisted on before embarkation.

DISINFECTION.

Disinfection under the quarantine service of Canada shall be by one or more of the following means:—

Fire, boiling, steam, formaldehyde, sulphur dioxide, mercuric bichloride solution, carbolic acid solution, formalin, chloride of lime, milk of lime.

Fire.—Thoroughly efficient, but seldom necessary as practically everything can be disinfected by less destructive means.

Boiling.—Articles to be wholly immersed in water actually boiling (100° C., 212° Fahr.) for not less than thirty minutes.

Steam.—Steam should be used for ship's hospital cabins, for all small apartments where it will not do much injury, and for divided steerages where steam pipes are provided as fire protection and the compartments are small.

It is also to be used under pressure with vacuum in special chambers for the disinfection of all clothing and effects that will not be injured thereby.

The exposure to the steam to be for not less than thirty minutes, the steam to be of the temperature of not less than 100° C., 212° Fahr., not greater than 115° C., 239° Fahr.

Articles injured by steam, such as leather, furs, skins, rubber trunks, valises, hats and caps, boots and shoes, bound books, silk, fine woollens and glued articles should not be disinfected by steam. For such articles washing with a disinfecting solution of mercuric bichloride, carbolic acid or formalin should be used. And for those which would be injured by wetting, disinfection by a gaseous agent, formaldehyde or sulphur dioxide.

Formaldehyde.—Such ship's cabins and saloons and articles as would be injured by steam may be disinfected by formaldehyde gas.

This may be evolved by:—

(*a.*) The free sprinkling or spraying of formalin (40 per cent solution of formaldehyde) on sheets suspended in small closed compartments, 10 ounces per 1,000 cubic feet. One sheet will hold about 5 ounces without dripping.

(*b.*) The formalin-permanganate method. Seven and a half ounces of potassium permanganate, powdered or in fine needles, and one pint of formalin for each 1,000 cubic feet of room space to be disinfected. *The permanganate must be put in before the formaldehyde solution.* The vessel in which the mixture is made should be of con-

siderable size else the vigorous foaming will overflow. A flaring ten quart tin pail may be used, or if a wide bottom vessel be used it need not be high. If the bottom of the dish be so wide that the requisite amount of permanganate just conceals it and the sides be eight inches high there will be no overflow from foaming or spattering.

The room in either of these methods should be closed up tightly for four hours.

With dry heat from the jacket and partial vacuum where formaldehyde appliances are attached to the chambers for steam disinfection, one hour's exposure. This method has great penetrating power, and is specially applicable to clothing, luggage, &c., that cannot be steamed.

Formaldehyde gas does not injure fabrics nor most colours.

It cannot be depended upon to kill rats, or other vermin, or mosquitoes.

Clothing, textiles and luggage, clean and in good condition, but suspected of infection can be efficiently and least injuriously disinfected by formaldehyde.

Where desired the smell of formaldehyde may be subsequently neutralized by the use of ammonia in liquid or gaseous form.

Sulphur dioxide gas.—(*a.*) By burning not less than three pounds of finely broken rolled sulphur per 1,000 cubic feet of space. The sulphur may be burned in iron pots standing in vessels of water. Ignition is best accomplished by alcohol.

(*b.*) Or liquified sulphur dioxide may be used, six pounds of the liquified gas for each 1,000 cubic feet of space.

(*c.*) Or the sulphur may be burned in a special furnace and the sulphur dioxide blown in by a powder fan.

Fumigation by sulphur dioxide is specially applicable to holds, steerages and other compartments too large for steam or formaldehyde, and which do not contain objects injured by it. It bleaches fabrics or materials dyed with vegetable and aniline dyes. It destroys linen or cotton goods by rotting the fibre through the acids formed. It injures most metals. It is promptly destructive to all forms of animal life. It is therefore specially valuable for the destruction of rats, &c., in plague ships, and of mosquitoes in yellow fever vessels.

In sulphur fumigation the time of exposure should be not less than twelve hours.

Mercuric bichloride.—This disinfectant is used in solutions not weaker than 1 to 1,000 of water. Its solubility is increased by using salt water, or by adding 2 parts per 1,000 of sodium (or ammonium) chloride. It is of use for the spraying, washing and drenching of free surfaces, alleyways, walls, floors, &c., where steam or gaseous disinfection cannot be used. It injuriously affects polished metals. It cannot be depended upon to penetrate substances in the presence of albuminous matters, dejecta, sputa, &c. These are best disinfected by burning or by chloride of lime or milk of lime.

Carbolic Acid.—In solution of 5 per cent this may be used instead of the mercuric bichloride solution for polished metals, bright work, &c.

Formalin (a 40 per cent aqueous solution of formaldehyde gas).—This in 5 per cent solution may also be used as a substitute for the mercuric bichloride solution or carbolic acid. It is non-injurious to metals.

GENERAL.

When it is necessary to disinfect the mails it can be done by steam superheated to dryness, sulphur dioxide or formaldehyde gas. Perforation of the letters facilitates penetration.

A simple method of disinfecting mails in their bags or boxes is by formaldehyde gas. A soft towel or bunch of clean cotton waste may be placed in each bag or box and formalin poured upon it in the proportion of 1 oz. for every cubic foot of air space, leaving the bag or box closed for 5 or 6 hours.

Textiles which are soiled with discharges of the sick or are in any other way presumably deeply infected, must be disinfected by boiling, or by steam, or by steeping in one of the above disinfecting solutions.

Cooking and eating utensils are to be disinfected by immersing in boiling water or by steam.

In generally infected vessels the bilges should be flushed out with sea or river water and then treated with steam, or one of the disinfecting solutions in large quantity.

33. During a time of cholera or other epidemic, the luggage of immigrants or passengers by every vessel arriving at any port in Canada, whether from an infected or healthy port or country, may by direction of the Minister of Agriculture be disinfected in each case.

(*a.*) When this disinfection is carried out at a sub-station, subsequent to the inspection and clearance at the main station, the clearance granted by the quarantine officer shall be conditional on the landing of immigrants and their luggage for disinfection.

(*b.*) The supervising officer of such disinfection to count the immigrants as they land, and if he find the number tallies with that marked on the clearance of the quarantine officer and has satisfactory evidence that all their luggage has been landed with them, he shall countersign the clearance which shall then become valid for Customs entry.

COSTS AND CHARGES.

34. All quarantine inspections, except those under section (45), shall be made without any charge against the vessel.

35. All costs incurred in the maintenance of and attendance upon healthy persons, who may have been exposed to infection, or who have refused vaccination (see section 31c.), detained for quarantine are to be at the charge of the vessel.

(*a.*) The master of a vessel shall make arrangements with the quarantine officer for the landing of the necessary provisions and for the attendance of stewards for serving them in cases where persons are so landed.

36. Persons sick will be treated and taken care of in the quarantine hospitals at the charge of the government.

37. In the event of a vessel being allowed to proceed, leaving its passengers in quarantine, the subsequent transfer of such passengers from quarantine to the port of destination shall be at the charge of the vessel.

38. The appliances, materials, and labour for disinfection are supplied by the government without charge to the vessel.

UNORGANIZED MARITIME QUARANTINE STATIONS.

39. Every maritime port at which there is no regular quarantine station and no regular quarantine officer permanently or temporarily appointed by the minister shall, for the purposes of these regulations, be constituted an unorganized maritime quarantine station.

40. Every collector or sub-collector of customs at every such unorganized maritime quarantine station shall be the quarantine officer.

41. Any collector or sub-collector of customs in his quality of quarantine officer at any unorganized maritime quarantine station in Canada, if he is informed of or has reason to suspect the presence on any vessel from abroad of any of the graver quarantinable diseases recited in section 4 of these regulations shall order a medical inspection to be made of vessel, crew, passengers, &c., on which such quarantinable disease exists or is suspected to exist.

42. A medical man making such inspection by order of the collector or sub-collector of customs shall, while engaged in such service, be the quarantine medical officer.

43. Every vessel arriving at an unorganized maritime quarantine station from an infected foreign port, or on board of which any death from infectious disease or out-

break of infectious disease has occurred during the voyage, shall remain outside until it receives permission to enter from the quarantine officer.

44. All the regulations applicable to regularly organized maritime quarantine stations shall also apply to every unorganized maritime quarantine station in so far as circumstances will admit.

45. In the event of a vessel arriving at an unorganized maritime quarantine station with quarantinable disease on board, the master shall pay a fee of $5 for each medical inspection ordered by the quarantine officer, and such fee or fees must be paid before customs clearance is granted.

46. If no disease is found on board a vessel arriving at an unorganized maritime quarantine station and ordered to be inspected by the quarantine officer, the cost of such inspection shall not be a charge against the vessesl, but will be defrayed by the government.

(*a.*) In submitting an account for a medical inspection ordered by him, a collector or sub-collector of Customs shall forward with the same a certificate setting forth the reason for his action (*Vide* Form No. 5 appended hereto).

47. If the disease found on board a vessel, or the history, conditions, or circumstances of a vessel be such as may seem to the collector or sub-collector of Customs to be beyond the capabilities for isolation or disinfection existing at an unorganized maritime quarantine station, he shall at once report the same to the Minister of Agriculture, who may, at his discretion, order that the vessel proceed to an organized quarantine station for quarantine clearance, before being allowed to make customs entry. And in such case the expense of the transfer of the vessel to the organized maritime quarantine station shall be a charge against the vessel.

48. In the case of Prince Edward Island the regulations with regard to unorganized maritime quarantine stations shall apply to vessels from all ports outside of that province.

UNORGANIZED INLAND QUARANTINE STATIONS.

49. Every inland port on the frontier of Canada at which there is no regular quarantine station and no regular quarantine officer permanently or temporarily appointed by the minister shall, for the purposes of these regulations, be constituted an unorganized inland quarantine station.

50. Every collector or sub-collector of Customs at every such inland frontier port shall be the quarantine officer.

51. Any collector or sub-collector of Customs in his quality of quarantine officer at any unorganized inland quarantine station in Canada, if he is informed of or has reason to suspect the presence of any of the graver quarantinable diseases recited in section 4 of these regulations, shall order a medical inspection to be made of the car. carriage, vehicle, boat or thing bringing or suspected of bringing such disease.

(*a.*) And such collector or sub-collector of Customs is empowered to detain such car, carriage, vehicle, boat or thing until such medical inspection shall have been made to his satisfaction.

(*b.*) A medical man making such inspection by order of the quarantine officer shall, while engaged in such service, be the quarantine medical officer.

52. And such quarantine medical officer shall have the power to cause vaccination of such persons as he may judge to require it, in the event of their refusing to be vaccinated, to prevent their entry into Canada.

53. The fee payable to such quarantine medical officer for each such inspection shall not exceed the sum of $5, and in the event of any quarantinable disease being found, such fee shall be payable by the company or owner of the car, carriage, vehicle, boat or thing, bringing such disease.

(*a.*) In submitting an account for a medical inspection ordered by him the collector or sub-collector of customs shall forward with the same a certificate setting forth the reason for his action (*Vide* form No. 6 appended hereto.)

54. The customs collector or sub-collector in his quality of quarantine officer shall, on the report of the quarantine medical officer, in the event of any of the graver quarantinable diseases being found, cause the detention of the car, carriage, vehicle, boat or thing, bringing any person ill with such infectious disease until the requirements of these regulations are in his judgment satisfied.

(*a.*) Any such person shall not be allowed to enter Canada until in the opinion of the quarantine medical officer he or she can safely do so.

(*b.*) Any car, carriage, vehicle, boat or thing, bringing such person to the frontier shall have the option of returning as an alternative to quarantine detention; or

(*c.*) The customs collector or sub-collector in his quality of quarantine officer shall in his discretion, on the report of the quarantine medical officer, cause the removal and isolation of such person in any car or boat, set apart for the purpose, or in any suitable building sufficiently separated from other buildings to prevent contact or infection.

(*d.*) And such quarantine officer may cause the disinfection of the car, carriage, vehicle, boat or thing, bringing such person, by means of formaldehyde, sulphur dioxide, or any other mode of disinfection prescribed in these regulations adapted to the circumstances of the particular case.

55. All the regulations applicable to regularly organized maritime quarantine stations shall also apply to every unorganized inland quarantine station in so far as circumstances will admit.

56. In the event of an epidemic of one of the graver quarantinable diseases prevailing in any part of the United States near which a railway, crossing the frontier of Canada runs, and where there may not happen to be at that point of the frontier any adequate quarantine arrangements and apparatus to cope with an inroad of such epidemic disease, the Governor in Council may, on an order published in the *Canada Gazette,* made on a report, direct the complete cessation of passenger traffic at such point or such restriction thereof as may, in the circumstances, be deemed advisable.

QUARANTINE OFFICERS GIVE ALL NECESSARY ORDERS—PROHIBITED FROM RECEIVING FEES OR GRATUITIES.

57. Every quarantine officer is empowered to give any necessary order, or do any necessary act, to enforce these regulations, and it is his duty to report immediately to the Minister of Agriculture any breach or attempted breach of them.

(*a.*) No quarantine officer nor other person employed in the quarantine service of Canada shall directly or indirectly receive or take any fee or gratuity or reward for any service rendered to any company, owner, master, crew, passenger, or other person at or detained in any quarantine, maritime or inland.

(*b.*) Every person to whom the knowledge of any breach of these regulations may come shall forthwith report the same to the Minister of Agriculture.

PENALTIES.

58. Every pilot shall be furnished with printed copies of these regulations, one of which it shall be his duty to hand to the master of every vessel coming from a port outside of Canada, immediately on boarding such vessel, under a penalty of $50.

60. Every master of a vessel, pilot or other person, shall be liable to a penalty of $400 and imprisonment for six months, for allowing customs entry of any vessel in the absence of production of a quarantine clearance, in accordance with the requirements of these regulations.

60. Every master of a vessel, pilot or other person, shall be liable to a penalty of $400 and imprisonment for 6 months, for any contravention of any of the foregoing regulations. The vessel shall be held liable for any pecuniary penalty imposed on the master.

61. Every ship's surgeon or other officer not answering with exact truth any of the questions contained in the form herewith appended shall be liable to a penalty of $400 and imprisonment for 6 months.

62. Every breach of sub-section (*a*) of section 57 of these regulations shall be held to be a malfeasance of office, an offence punishable by dismissal.

No. 1.

QUESTIONS TO BE ANSWERED UNDER OATH TO QUARANTINE OFFICERS BY MASTERS, SURGEONS OR OFFICERS OF VESSELS.

Date 19

1. What is your vessel's name and your name?
2. From what port and on what date did your vessel sail?
3. What is your cargo, and whence taken on board?
4. Are there rags in such cargo?
5. Has your vessel touched at any place or places on her voyage?
6. Was such place or places, or any of them, to your knowledge infected with cholera, smallpox, plague or any pestilential fever or disease?
7. How many persons on board when the vessel sailed? Cabin passengers, ; intermediate, ; steerage, ; cattlemen, ; crew ; Total
8. State whether any person on board during the voyage has been, or is now ill with any of the diseases above referred to, and, if so, how many?
9. Has any person died on board during the present voyage, and if so, state all particulars?
10. Have you satisfied yourself by personal examination of the vaccinal marks that each of the steerage passengers has been vaccinated, and do you swear to the correctness of the endorsations on their tickets as to the vaccinal protection?
11. Have you vaccinated those of them on whom you failed to find such marks?
12. Did the vaccination of the steerage passengers take place at the time of, or before embarking?
13. How many have you vaccinated on your present voyage?
14. Did you or any of the crew or passengers, within your knowledge, land at any place or places within Canada during the voyage?
15. Is any person on board lunatic, idiotic, deaf, dumb, blind or infirm, and, if so, is such person accompanied by relatives or guardians?
16. Have you an isolated hospital for men, and another for women, ventilated from above and not from the passage?
17. Were such hospitals, or one of them, immediately made use of on the occurrence of the disease?
18. Are there any other facts which, in your opinion, should be communicated?
19. Have you personally, during the present voyage, examined each one of the passengers and crew for proof of vaccination within seven years, or of having had the smallpox in that period?
20. Have you vaccinated those of them on whom you failed to find such marks, and, if so, how many?

(Signature) *Master.*
(Signature) *Surgeon.*

I, *Master,*

I, *Surgeon,*

do solemnly and sincerely swear to the exactness and truth of the answers to the above questions signed by me. So HELP ME GOD.

Master.
Surgeon.

Sworn before me at this day of 19 .

Quarantine Officer and Justice of the Peace, authorized by Order in Council under R.S., c. 74: 'An Act relating to Quarantine.'

No. 2.

QUARANTINE OFFICER'S CLEARANCE FOR CUSTOMS COLLECTOR.

Port of. . . . . 19 .

I hereby declare that I have inspected the. . . . . Master, and found this vessel to be free from infectious disease or well founded suspicion thereof, and it is hereby admitted to pratique.

. . . . . *Quarantine Officer.*

Collectors of customs will take notice of the following regulations:—

Every vessel arriving from any port outside of Canada at any organized quarantine station shall be inspected by a duly appointed quarantine officer, at the place duly appointed for such inspection, and shall not be allowed to make customs entry at any port in Canada, until it has received a clean bill of health from such officer at such place.

Every collector of customs or customs officer shall be liable to a penalty of $400 and imprisonment for six months, for allowing customs entry of any vessel in the absence of production of a quarantine clearance, in accordance with the requirements of these regulations.

These regulations must be strictly observed.

Department of Agriculture,
Ottawa.

No. 3.

QUARANTINE OFFICER'S PARTIAL CLEARANCE FOR CUSTOMS COLLECTOR.

(Vessels for Quebec or Montreal via Rimouski or any other port designated by the Minister.)

Port of. . . . . .19 .

I hereby declare that I have inspected the. . . . . Master, and hereby permit the landing therefrom at this port of the mails and of the following persons with their effects, the vessel to proceed to. . . . . for her clearance for customs.

. . . . . .
Quarantine Officer.

Collectors of Customs will take notice of the following regulations:—

In the case of a vessel carrying His Majesty's mails and arriving by the St. Lawrence, clearance certificate shall be from a quarantine officer at Rimouski (or at any other port designated by the Minister) or at Grosse Isle only, and in the case of every other vessel from Grosse Isle only, unless special permission to the contrary be obtained from the Minister of Agriculture.

In the event of his finding a quarantinable disease on board the quarantine officer at Rimouski shall withhold the final clearance for customs entry which shall only be given to the vessel when she has been released after quarantine inspection at Grosse Isle.

When, however, in the judgment of the quarantine officer at Rimouski (or at any other port designated by the Minister) mails and persons and their effects may be permitted to land at Rimouski (or at any other designated by the Minister) from such vessel a partial clearance shall be given by such quarantine officer covering only the mails and the persons allowed to land there with their effects.

Every collector of customs or customs officer shall be liable to a penalty of $400 and imprisonment for six months for allowing customs entry of any vessel in the absence of production of a quarantine clearance, in accordance with the requirements of these regulations.

These regulations must be strictly observed.

Department of Agriculture,
Ottawa.

No. 4.

QUARANTINE OFFICER'S PARTIAL CLEARANCE FOR CUSTOMS COLLECTOR.

(Vessels for St. John, N.B., via Halifax, N.S.)

Port of. . . . . .19 .

I hereby declare that I have inspected the . . . . . Master, and hereby permit the landing therefrom at this port of the mails and of the following persons with their effects, the vessel to proceed to. . . . . for her clearance for customs.

. . . . . .
Quarantine Officer.

Collectors of customs will take notice of the following regulations:—

With regard to vessels touching at Halifax on their way to St. John, when, after inspection, the quarantine officer at Halifax finds a vessel healthy he shall give a full customs clearance which shall be valid at the port of St. John, and the vessel shall then proceed there coastwise.

In the event of his finding a quarantinable disease on board the quarantine officer at Halifax shall withhold the final clearance for customs entry which shall only be given to the vessel when she has been released after quarantine inspection at St. John.

When, however, in the judgment of the quarantine officer at Halifax mails and persons and their effects may be permitted to land at Halifax from such a vessel a partial clearance shall be given by the quarantine officer at Halifax covering only the mails and the persons allowed to land there with their effects.

Every collector of customs or customs officer shall be liable to a penalty of $400 and imprisonment for six months for allowing customs entry of any vessel in the absence of production of a quarantine clearance, in accordance with the requirements of these regulations.

These regulations must be strictly observed.

Department of Agriculture,
Ottawa.

No. 5.

UNORGANIZED MARITIME QUARANTINE STATIONS.

(To be used by a Collector or Sub-Collector of Customs when certifying to an account for a medical inspection ordered by him.)

. . . . . .19 .

I hereby certify that the medical inspection of the. . . . . from. . . . . was made by my order in accordance with section 41 of the quarantine regulations, for the reason given under letter below:—

(*a.*) The vessel came in flying a yellow flag.

(*b.*) The vessel had come from a foreign port declared by the department as infected.

(*c.*) I had been informed by of the presence of infectious disease on board.

(*d.*) After going on board I had reason to suspect the presence of infectious disease for the following reasons:—

. . . . . .

Collector of Customs.

Port of. . . . . .

No. 6.

UNORGANIZED INLAND QUARANTINE STATIONS.

(To be used by a Collector or Sub-Collector of Customs when certifying to an account for a medical inspection ordered by him.)

. . . . . .19 .

I hereby certify that the medical inspection of. . . . . from. . . . . was made by my order in accordance with section 51 of the quarantine regulations.

. . . . . .

Collector of Customs.

Port of. . . . . .

No. 18.

REGULATIONS GOVERNING THE INSPECTION OF MEATS, 1907.

1. In these regulations, unless the context otherwise requires:

(*a.*) 'Act' means the 'Meat and Canned Foods Act.'

(*b.*) 'Minister' means the Minister of Agriculture.

(*c.*) 'Carcasses means the carcasses of cattle, swine, sheep, goats or poultry.

(*d.*) 'Establishment' means any abattoir, packing-house, or other premises in which such animals are slaughtered, or in which any parts thereof or products thereof are prepared for food for export, or are stored for export.

(*e.*) 'Export' means export out of Canada, or out of the province in which the establishment is situated to another province.

(*f.*) 'Food' includes every article used for food or drink by man, and every ingredient intended for mixing with the food or drink of man for any purpose.

(*g.*) 'Inspector means an inspector appointed under the Act.

(*h.*) 'Regulations' means regulations made under the Act.

(*i.*) 'Portions' means the usual cuts, known as sides, quarters, shoulders, hams, bellies, &c., and also entire organs, such as tongues, livers, hearts, &c.

(*j.*) 'Products' means food prepared from carcasses or portions.

(*k.*) 'Canada Approved' means that carcasses, portions, or edible products so marked have been inspected and found fit for food.

(*l.*) 'Rejected' means that carcasses or portions so marked may be rendered into lard or tallow.

(*m.*) 'Condemned' means that carcasses, portions or products so marked are unfit for food, and shall be destroyed for food purposes.

2. The following regulations shall not apply to any establishment within the meaning of the Act in which the sole products prepared for food for export, or stored for export, are fish, fruit or vegetables.

3. Every animal slaughtered, and all carcasses or products therefrom, prepared for food purposes, shall be inspected, and handled as required in these regulations.

4. The owner or manager of any establishment slaughtering animals, or preparing any carcass or portion thereof for food purposes, and which is intended for export trade, may make application to the minister for inspection, in accordance with the provisions of the 'Meat and Canned Foods Act.' Application shall be in writing, and shall give full particulars as to location, capacity per day, species of animals killed, quantity of meats and products thereof exported. Forms for application will be supplied by the Veterinary Director General on request.

On receipt of an application as above, the minister may, after ascertaining that the facts are as stated, and that the sanitary condition of the establishment applying is satisfactory, make provisions for inspection in accordance with the terms of the 'Meat and Canned Foods Act.'

5. In order that a distinctive mark may be given all carcasses, portions, or products thereof, slaughtered or prepared for food at every establishment at which inspection is maintained, the minister will assign to such establishment a number, which shall be used with the Crown and the words 'Canada Approved,' to mark all carcasses, portions or products thereof, passed as fit for food. Branch establishments may use the same number by placing a serial letter in conjunction with it.

6. At establishments for which inspection is provided the minister shall appoint an inspector to take charge of the inspection, detailing also such assistants as he may deem necessary.

Inspectors shall, when in the performance of their duties, wear a badge provided by the Department of Agriculture.

7. Establishments at which inspection is maintained shall furnish suitable accommodations for inspectors, such accommodations to include the exclusive use of a room, or rooms, suitable for office purposes, together with such fittings as may be required for the proper conduct of the business of the department connected with such establishment.

The inspector in charge shall be kept fully informed by the management of all details regarding the actual operation of the establishment, and such operation will not be permitted under any circumstances without the knowledge of the inspector in charge, and either under his supervision or that of an inspector detailed by him for that purpose.

Every reasonable arrangement must be made as regards hours of work and other details, for the mutual convenience of the management and the officers of the department.

This section shall have special reference to small establishments situated in the same town, or in close proximity to each other, when two or more are under the supervision of the same inspector.

8. All establishments having inspection shall be suitably lighted and ventilated. All appliances, such as tables, trucks, vats, machines, containers, &c., must be kept clean and sanitary. All steps in the course of production shall be carried on carefully and with strict cleanliness, and under the supervision of an inspector.

Rooms in which carcasses, parts, or products thereof, are prepared, shall be frequently whitewashed or painted, and shall contain facilities for cleansing all equipment.

Employees of the establishment engaged in handling foods must be free from tuberculosis or other communicable diseases, and must observe such general rules as to sanitation as may be deemed necessary by the inspector in charge.

No carcasses or parts thereof entering into the production of food, shall be allowed to come in contact with anything that will contaminate or deteriorate them.

Coverings used by employees to protect their clothing or persons shall be of material easily cleansed.

Dressing rooms and lavatory accommodations shall be ample, sanitary, and fully equipped, and shall be entirely apart from any room or compartment used for the storing or production of food.

The yards and pens belonging to, or used in connection with any establishment shall be maintained in a clean, comfortable and sanitary condition, and shall not be used for the fattening of swine or other animals, nor shall any offal or other refuse from the establishment be utilized for feeding purposes.

Inspectors in charge of each establishment will suggest to the manager or owner any needed changes in the sanitary conditions, and will be required to report weekly to the Veterinary Director General as to the general observance of this section.

Inspectors are authorized to refuse inspection if sanitary conditions are not observed.

9. Inspectors in charge of establishments will be required to furnish to the Veterinary Director General such daily and other reports as may be required.

Proprietors of establishments shall furnish to the inspector in charge, upon request, accurate information regarding receipts of stock, shipments and products on hand.

10. Every animal about to be slaughtered shall be examined by a veterinary inspector in the yards, or pens, of the establishment prior to entering the killing floor. Such establishments shall provide suitable facilities for separating healthy animals from those showing symptoms or suspected of being affected with disease.

Only such animals as are found on inspection to be healthy shall be slaughtered at the regular kill.

Animals found diseased or suspected of being diseased shall be tagged in the left ear with a metal tag, bearing the word 'Held,' and killed separately at the end of the regular kill.

Animals known as cripples and downers shall be tagged 'Held,' and may be slaughtered at the regular kill or otherwise, upon permission of the inspector in charge.

11. Inspectors shall make a thorough inspection at the time of slaughter of the carcass and all portions thereof. If the examination reveals no grounds for detaining or condemning the same, the inspector shall pass and mark such carcass or portions as required in section 13.

If the inspector deem it necessary to hold any carcass or part thereof for further examination he shall mark the same 'Held,' as required in Section 22.

Should the inspection show the carcass or any part thereof to be in any way unfit for food, the inspector shall at the time of inspection mark such carcass or portion thereof with a 'Condemned,' tag as provided in section 24.

Carcasses which may be rendered into lard or tallow shall be marked 'Rejected,' but only after all diseased parts have been removed as provided in section 23.

No part of any carcass shall be removed or so placed as to prevent its ready identification, except with the authority of the inspector.

12. The entire carcass of any animal affected with any of the following diseases or conditions is to be condemned and tanked as hereinafter provided:

1. Anthrax.
2. Black leg.
3. Pyæmia and Septicæmia.
4. Rabies.
5. Tetanus.
6. Malignant catarrh.
7. Hog cholera.
8. Swine plague.
9. Texas fever.
10. Parasitic ictero hæmaturia.
11. Inflammation (chronic or acute) of any of the following tissues; Lungs, pleura, intestines, peritoneum, or uterus.
12. Traumatic pericarditis.
13. Jaundice.
14. Uræmia.
15. Sexual smell.
16. Parturition (carcasses of animals having within ten days given birth to young, if showing signs of septic infection).
17. Immaturity. Every animal under three weeks of age.
18. Tapeworm cysts. Cysticercus bovis. Cysticercus cellulosæ.
19. Emaciation or anæmia.
20. Tuberculosis. Every carcass affected with tuberculosis and emaciated shall be rejected, together with other carcasses affected with tuberculosis. Except in those cases in which the lesions are small, encapsulated, or calcified, and confined to the following tissues:—

(*a.*) The cervical lymphatic gland and two groups of the visceral lymphatics in the thoracic or abdominal cavity; for instance, the cervical, bronchial and mediastinal glands, or the cervical, hepatic and mesenteric glands.

(*b.*) The cervical lymphatics, one group of visceral lymphatics and one organ in the thoracic or abdominal cavity; for instance, the cervical, bronchial and mediastinal lymphatics and the liver.

(*c.*) Two groups of visceral lymphatic glands and one organ in the thoracic or abdominal cavity; as, for instance, the bronchial and mediastinal lymphatics and the lungs or the mesenteric and hepatic lymphatics and the liver.

(*d.*) One group of visceral lymphatics in the thoracic and abdominal cavities and the cervical glands; the bronchial, mesenteric and cervical lymphatics, or the mediastinal, hepatic and cervical.

(*e.*) Two groups of visceral lymphatic glands in the thoracic cavity, and one group in the abdominal cavity, or vice versa; as for instance, the bronchial, mediastinal and the hepatic, or bronchial, mesenteric and hepatic.

(*f.*) Carcasses affected as above in which the lesions are in a state of caseation, or show softening centres, and those in which lesions are more numerous than above specified, yet are slight, calcified, or encapsulated, may be rendered into lard or tallow after the diseased parts are removed. Such carcasses must be cooked by steam at a temperature not lower than 220° F., and for not less than four hours.

(*g.*) Carcasses in which the cervical lymphatics, one organ, and the serous membrane in either the thoracic or abdominal cavity, as the cervical glands, lungs, and pleura, or the cervical, liver and peritoneum. Carcasses so affected may be rendered into lard or tallow. Such carcasses must be cooked by steam at a temperature not lower than 220° F., and for not less than four hours. Every head, organ or part showing lesions of tuberculosis must be 'rejected' or 'condemned.'

21. Actinomycosis and actinobacillosis, except when the disease is confined to the seat of primary infection and the carcass is well nourished and otherwise healthy. The head, including the tongue, or other organ which may be the seat of primary infection, must be destroyed.

22. Portions or products of any carcass showing the following lesions:—

(*a.*) Decomposition.

(*b.*) Abscesses, bruises, tumours, parasites. Every organ or part of carcass showing an abscess or tumour, or which is badly bruised or affected with parasites, shall be 'condemned)'—(livers, flukes, &c.)

Any condition not herewith described must be dealt with as the judgment of the inspector directs.

The presence at any establishment of an animal affected with or showing symptoms of any contagious or infectious disease, must be promptly reported to the Veterinary Director General by the inspector in charge, who shall take immediate steps to ascertain the point of origin and address of former owner, and place from whence such animal or animals were shipped, at the same time taking further action under the provisions of the 'Animal Contagious Diseases Act,' as he may deem necessary and advisable.

Animals in an advanced stage of pregnancy shall be tagged 'Held.' They shall not be slaughtered at that time nor for ten days after parturition, but may be removed for stock or dairy purposes, provided they are not affected with and have not been exposed to infectious or contagious disease. Before such animals are released, permission shall be granted by the inspector in charge and 'Held' tag removed.

13. Every carcass found to be fit for food shall be stamped by the inspector according to the instructions of the Veterinary Director General. Such stamps shall show the Crown and the words 'Canada Approved,' and the establishment number.

Every portion or organ of any carcass previously inspected and which is to leave the establishment for export trade, shall have a stamp or mark bearing the Crown and the words 'Canada Approved,' and the establishment number. This wording or an abbreviation thereof may be included, with the approval of the Veterinary Director General, in any branding iron or instrument used for the purpose of branding or burning a trade mark or the packer's name upon any portion of swine. This wording shall be legible, and shall be accepted in lieu of other inspection marks. The marking and stamping of all carcasses, portions or products shall be supervised by an inspector.

14. Sausages, canned meats, and portions intended for cure, shall be prepared only from carcasses or portions which have been marked 'Canada Approved,' and which on reinspection are found fit for food. Their preparation and packing shall be supervised by an inspector, who shall not allow any fixture, appliance or receptacle to be used in the production of food, unless the same is clean and sanitary.

No food product shall contain any deleterious substance, drug, dye or preservative.

With the object of preventing the use of deleterious substances, the inspector shall as often as deemed advisable procure samples of the preservatives used, as also of the different food products during their preparation, or after the same have been prepared and shall submit them without delay to the department for analysis.

Inspectors in charge will be furnished by the department with the names of harmless preservatives and dyes which may be used; the addition of others will prevent the approval of the product.

15. The proprietor or manager of an establishment shall upon request of the inspector in charge, furnish to him free of charge any sample or samples of preservatives, food products, or any ingredient used in the preparation of foods. Samples so obtained must be sealed, labelled, and marked with a description of the same, together with the inspector's name, and the date, and forwarded at once to the Veterinary Director General.

16. All portions, or products of carcasses, prepared for food and packed in cans, or similar receptacles, or in any package, shall be subject to inspection during the whole course of preparation and packing; and all such cans or receptacles shall be marked, unless otherwise ordered by the Governor in Council, with :

(*a.*) The initials of the Christian names, the full surname, and the address, or, in case of a firm or corporation, the firm or corporate name and address of the packer;

(*b.*) A true and correct description of the contents of the package. No can, receptacle, or package subject to inspection shall be marked with anything which falsely represents the quantity, weight, contents, or date when contents of same were marked.

These requirements shall be embodied upon a trade label, duly approved by the minister, having thereon in addition to the crown and the name and address of packer and description of contents, the Crown and the words 'Canada Approved,' and the number of the establishment. Letters contained in such label shall be of uniform size.

A copy of every label used by each establishment shall be filed with the Department of Agriculture.

In cases where a large supply of trade labels are on hand, a sticker furnished by the department may be used on such labels, having thereon the Crown and the words 'Canada Approved,' and the establishment number. Such stickers may be affixed only under the supervision of an inspector.

17. When carcasses, portions, or products thereof are shipped for export from any establishment, in any case, or covering, concealing wholly or partially the contents, the case or covering shall have a number stamp having thereon the Crown and the words 'Canada Approved.' No other reference to inspection under the 'Meat and Canned Foods Act' shall be placed upon any cover so marked.

Proprietors of establishments shall supply all necessary help to affix labels and stamps, under the supervision of an inspector.

18. After the contents of any package or covering bearing a stamp having thereon the Crown and the words 'Canada Approved' have been removed, the stamp shall forthwith be destroyed.

19. No carcasses or portions thereof other than those bearing the words 'Canada Approved,' and which have been inspected and found fit for food, shall be allowed to enter any establishment at which inspection is maintained, except as hereinafter provided.

(*a.*) Carcasses, portions or products thereof shipped from the United States, and marked 'U.S. Inspected and Passed,' but to guard against possible deterioration, such carcasses, portions or products shall be reinspected and dealt with accordingly.

(*b.*) Carcasses, portions or products thereof shipped from other countries, if properly certified, whether by marking or otherwise, to have passed government inspection before leaving the country of origin, but such carcasses, portions or products shall be reinspected and dealt with accordingly.

(*c.*) Dressed carcasses, with the head, heart, lungs and liver, held by their natural attachments, such carcasses to be inspected before entering the establishment, and if found fit for food to be marked with the Crown and the words 'Canada Approved'; if found to be diseased or otherwise unfit for food, to be dealt with as provided in the regulations.

(*d.*) Carcasses, or portions, shipped from another establishment at which inspection is maintained, when the shipment is accompanied by a certificate from the inspector in charge of such establishment. Such certificates shall show number of carcasses or portions, together with car number and its initials.

In case of carload shipments, cars should be sealed on both sides, and seals shall be broken only by an inspector or his assistant.

(*e.*) Dressed carcasses, with the head, heart, lungs and liver, held by their natural establishment having inspection, unless the inspector in charge or his assistant has been notified.

(*f.*) Carcasses, portions, or products thereof, shall be permitted to enter establishments only through such doors, passages, or other means of entrance as are designated for the purpose, and at such times and under such conditions as may be approved by the inspector.

20. Inspectors may at any time reinspect any carcass, portion or product thereof, which has been prepared, stored in or returned to any establishment, or is about to be shipped therefrom. If upon reinspection such carcass, portion, or product is found to be unfit for food, by reason of adulteration or deterioration, it shall be marked and disposed of as provided in the regulations.

21. In every establishment there shall be set apart special rooms or compartments, one to be known as the 'Detention' room, in which all carcasses, portions, or products thereof, marked 'Held,' shall be placed until finally inspected. The other room shall be known as the 'Rejected' room, in which shall be placed all carcasses, portions, or products thereof marked 'condemned' or 'rejected.' Both rooms shall be well lighted, and so constructed and situated that they may be easily cleansed and disinfected. The doors shall be so fitted that they may be locked, with locks supplied by the Department of Agriculture, and the inspector shall retain charge of such locks and their keys.

If, after final inspection, in the detention room, of any carcass, or portion marked 'Held,' the same is found fit for food, the 'Held' tag shall be removed, and the carcass, or portion, stamped as required in section 22. Any carcass or portion marked 'Held,' and which on final inspection is found to be unfit for food, shall be marked as provided in the regulations, and removed at once to the 'rejected' room.

22. If at any time during the slaughter of an animal, or the production of any foods therefrom, the inspector deems it necessary to further inspect the carcass, portion or products, he shall firmly attach thereto a black paper tag, numbered and having thereon the word 'Held.' In all cases where the inspector making the post-mortem examination is not the same individual as the one making the final inspection, the former shall furnish to the latter a description of the animal, disease or symptom thereof and the number of tag. If on final inspection, which shall be made not less than twelve hours later, the carcass, portion or product, is found fit for food, the 'Held' tag shall be removed and the carcass, portion or product marked 'Canada Approved.' Should inspection show the same unfit for food, it shall be immediately marked as provided, and removed to the 'rejected' room for final disposition.

Carcasses showing diseased or injured portions which cannot be readily removed at the time of slaughter, shall be marked 'Held,' and placed in the 'detention' room until after carcass is chilled, when the inspector may, if he sees fit, remove and mark the affected portion, 'Condemned,' and the remainder of the carcass shall be marked 'Canada Approved.'

23. Each carcass, or portion thereof, found on inspection or reinspection to be unfit for food purposes, but the condition of which is such as to allow of its being

rendered into lard or tallow, shall be marked with a numbered red paper tag having thereon the word 'Rejected.'

All carcasses or portions so marked must be cooked by steam at a temperature not lower than 220° F., for not less than four hours.

24. Upon each carcass, portion, or product thereof, found on inspection, reinspection, or during the process of production, to be in any way unfit for food, there shall be placed a black paper tag bearing the number and the word 'Condemned.' All animals found dead, or in a dying condition, upon the premises of any establishment, shall be tagged in the right ear by an inspector with a metal tag bearing a number and the word 'Condemned.' Such tag shall under no circumstances be removed except by the inspector supervising the final disposition of the carcass, portion or product so marked, who shall report as to its disposition.

25. Every establishment having inspection shall be equipped with facilities satisfactory to the department for the tanking of all diseased carcasses, portions, or products thereof. They must be so placed or operated as to cause no odours or fumes to pervade any room wherein carcasses or products thereof are prepared

All carcasses, portions, or products thereof, which have been marked 'Condemned' shall be tanked as hereinafter provided, under the supervision of an inspector. Tanks shall be sealed and seals broken only by the inspector, who shall see that the process of tanking is sufficiently thorough to render impossible the utilization of any of the condemned carcasses, parts or products in any way for human food. As a further precaution with the above object in view, the minister may authorize the use by inspectors of any colouring or other matter which may be considered suitable. Establishments not having the necessary equipment for tanking will be granted reasonable time in which to provide the same. Until then, inspectors will slash carcasses or portions thereof, in such a way as to render them unsaleable and easily identified, and will in addition be required to supervise their burning or proper burial.

26. No clearance shall be grantad any vessel carrying any carcasses, portions, or products thereof (except ship stores), unless said carcasses, portions or products have been duly marked with the Crown and the words 'Canada Approved.' As evidence that this requirement and the provisions of the Act, have been complied with, it shall be deemed sufficient, if a certificate signed by the shipper or by the inspector in charge of the establishment from which the shipment originated has been filed, at the time of filing the manifest, with the Customs authorities by the master, owner or agent of the vessel. Such certificate shall certify that the carcasses, portions or products have been duly inspected and marked according to the provisions of the Act, and shall also contain thereon the number of carcasses, portions or packages, weight, description, shipping marks, shipper, consignee and destination. In the event of the certificate being furnished by the shipper, it shall be in the form provided for similar shipments in section 27.

On request of the owner of an establishment, the inspector in charge shall issue a certificate in triplicate covering any carcasses, portions or products thereof, which have been inspected and marked with the Crown and the words 'Canada Approved,' and which are to be exported. Such certificates shall be issued in serial numbers. The original and duplicate shall be given to the shipper; the original to be attached to the bill of lading accompanying the shipment for the information of the Customs authorities.

27. When any carcass, portion or product thereof intended for human food is offered for transportation, for export, the person, firm or corporation shipping the same shall fill out a certificate in duplicate, in one of the following prescribed forms, which shall be delivered to the common carrier or other person to whom such shipment is offered; and no common carrier or other person shall transport or accept for transportation for export any carcass, portion, or product thereof intended for human food, until such certificate in duplicate has been duly made and signed by the shipper.

(1) To be used when shipment consists of duly inspected and marked carcasses, or parts, or edible products thereof:—

. 19

Name and address of shipper. . . . . .
Name and address of consignee. . . . . .
Name of carrier. . . . . .

I hereby certify that the following described shipment of carcasses, parts or products thereof, has been duly inspected and marked with the Crown and the words 'Canada Approved,' according to the 'Meat and Canned Foods Act,' and that the articles comprising it have not been tampered with or treated in any way other than by smoking since they were so marked, and that they are at this date wholesome and fit for human food.

No. of packages. . . . . .
Weight. . . . . .
Description . . . . . .
Shipping marks. . . . . .

. . . . . .
Signature of Shipper.

(2) To be used when shipment is offered by a retail butcher or dealer:—

. 19

Name and address of shipper. . . . . .
Name and address of consignee. . . . . .
Name of carrier. . . . . .
I,. . . . . .herby certify that I am a retail butcher, and that the following described carcasses, parts, or products thereof were from animals slaughered upon my own premises, and are at this date wholesome and fit for human food.
No. of carcasses or parts. . . . . .
Description. . . . . .

. . . . . .
Signature of Shipper.

(3) To be used when shipment is made by a farmer:—

. 19

Name and address of shipper . . . . . .
Name and address of consignee. . . . . .
Name of carrier. . . . . .
I, ...hereby certify that I am a farmer, and that the following described carcasses or parts thereof, were from animals owned by me and slaughtered upon my own premises, and that at this date the same are wholesome, and fit for human food.
No. of carcasses or parts . . . . . .
Description. . . . . .

. . . . . .
Signature of Farmer.

28. All certificates must be made in duplicate, and original shall be filed by the initial carrier and the duplicate forwarded by him to the Veterinary Director General.

29. Way-bills, transfer slips, running slips or conductors' cards accompanying any shipment of carcasses, portions or edible products thereof, shall have stamped thereon, or attached thereto the following certificate:—

In case of duly inspected and marked carcasses, parts or edible products:

'Shipment inspected and marked 'Canada Approved,' as evidenced by shipper's certificate on file with initial carrier.

Railroad company. . . . . .

Agent.'

In case of shipments made by retail butchers or farmers.

'Uninspected as evidenced by shipper's certificate on file with initial carrier.

Railroad company . . . . . .

Agent.'

30. All carcasses, portions or edible products, stored, packed or in cure at any establishment on September 3, 1907, shall be inspected, and any found unfit for food shall be marked 'Condemned.' Those fit for food shall not be marked 'Canada Approved' until such time as the carcasses, portions or products are ready for shipment, and upon reinspection at that time are found wholesome.

31. No person shall apply the words 'Canada Approved,' or any word or words of like meaning or effect, to any article subject to inspection under the Act or to any package containing the same, except under direction of an inspector or with his approval or consent.

No. 19.

RULES AND FORMS UNDER TRADE MARKS AND DESIGNS ACT AND TIMBER MARKING ACT.

I.

There is no necessity for any personal appearance at the Department of Agriculture, unless specially called for by order of the Minister or the Deputy, every transaction being carried on in writing.

II.

In every case the applicant or depositor of any paper is responsible for the merits of his allegations and of the validity of the instruments furnished by him or his agent.

III.

The correspondence is carried on with the applicant or his agent, but with one person only, and will be conveyed through the Canadian mails free of charge.

IV.

All papers are to be clearly and neatly written on foolscap paper, and every word of them to be distinctly legible.

Drawings are not to exceed thirteen inches in length and eight inches in width.

V.

An application for registration shall be signed by the applicant or by an agent duly authorized.

A partner may sign for a firm. A director or secretary or other principal officer of a company may sign for the company.

VI.

All communications to be addressed in the following words; To the Minister of Agriculture (Trade-Mark and Copyright Branch), Ottawa.

VII.

As regards proceedings not specially provided for in the following forms, any form being conformable to the letter and spirit of the law will be accepted, and if not conformable will be returned for correction.

VIII.

A copy of the Act and the rules with a particular section marked, sent to any person making an inquiry, is intended as a respectful answer by the office.

IX.

Information as to subsisting registrations will not be furnished by the office, the registers and indexes being open for inspection free of charge.

FORMS.

FORM I.

DOMINION OF CANADA.

The Trade Mark and Design Act.

Application for registration of a General Trade Mark. (To be made in duplicate.)

I, (*or* we) of the of in the (of hereby request that you register in the name of a General Trade Mark, which I (*or* we) verily believe is mine (*or* ours), on account of having been the first to make use of the same (or on account of having acquired it from who, I (*or* we) verily believe, was (*or* were) the first to make use of the same). I (*or* we) hereby declare that the said General Trade Mark was not in use to my (*or* our) knowledge by any other person than myself (*or* ourselves) at the time of my (or our) adoption thereof. The said General Trade Mark consists of (*verbal description of the Trade Mark*).

A drawing of the said General Trade Mark is hereunto annexed.

Signed at this day of 19 , in the presence of the two undersigned witnesses.

Witnesses:

To the Minister of Agrieulture,
Ottawa.

FORM II.

DOMINION OF CANADA.

The Trade Mark and Design Act.

Application for registration of a Speeific Trade Mark. (To be made in dupli-eate.)

I, (*or* we) of the of in the of hereby request you to register in the name of a Specific Trade Mark to be used in connection with the sale of which I (*or* we) verily believe is mine (*or* ours) on account of having been the first to make use of the same (or, on account of having acquired it from who, I (*or* we) verily believe, was (*or* were) the first to make use of the same).

I (*or* we) hereby declare that the said Specific Trade Mark was not in use to my (*or* our) knowledge by any other person than myself (*or* ourselves) at the time of my (*or* our) adoption thereof. The said Specific Trade Mark eonsists of (*verbal description of the Trade Mark*).

A drawing of the said Specifie Trade Mark is hereunto annexed.

Signed at this day of 19 , in the presenee of the two undersigned witnesses.

Witnesses:

To the Minister of Agriculture,
Ottawa.

FORM III.

DOMINION OF CANADA.

The Trade Mark and Design Act.

Application for registration of an Industrial Design. (To be made in duplicate.)

I, (*or* we) of of in the province of Dominion of Canada, hereby request you to register in the name of an Industrial Design of a of which I (*or* we) am (*or* are) the proprietor (s).

I (*or* we) declare that the said Industrial Design was not in use to my (*or* our) knowledge by any other person than myself (*or* ourselves) at the time of my (*or* our) adoption thereof. The said Industrial Design consists of (*verbal description of the Industrial Design.*)

A drawing of the said Industrial Design is hereunto annexed.

Signed at this day of 19 , in the presence of the two undersigned witnesses.

Witnesses:

The Minister of Agriculture,
Ottawa.

FORM IV.

DOMINION OF CANADA.

The Timber Marking Act.

Application for registration of a Timber Mark. (To be made in duplicate.)

I, (*or* we) of the of in the of hereby request you to register in the name of a Timber Mark which I (*or* we) hereby declare is not and was not in use to my (*or* our) knowedge by any person other than myself(*or* ourselves) at the time of my (*or* our adoption thereof. The said Timber Mark consists of (*verbal description of the Timber Mark*).

A drawing of the said Timber Mark is hereunto annexed.

Signed at this day of 19 , in the presence of the two undersigned witnesses.

Witnesses:

The Minister of Agriculture,
Ottawa.

No. 20.

RULES AND FORMS UNDER THE COPYRIGHT ACT.

I.

There is no necessity for any personal appearance at the Department of Agriculture, unless specially called for by order of the Minister or the Deputy, every transaction being carried on by writing.

II.

In every case the applicant or depositor of any paper is responsible for the merits of his allegations and for the validity of the instruments furnished by him or his agent.

III.

The correspondence is carried on with the applicant or his agent, but with one person only, and will be conveyed through the Canadian mails free of charge.

IV.

All papers are to be clearly and neatly written on foolscap paper, and every word of them to be distinctly legible.

All copies of books to be deposited shall be bound in boards, and all copies of maps and photographs shall be mounted.

V.

An application for registration shall be signed by the applicant or by an agent duly authorized.

A partner may sign for a firm. A director or secretary or other principal officer of a company may sign for a company.

VI.

All communications to be addressed in the following words: To the Minister of Agriculture, (Trade-Mark and Copyright Branch), Ottawa.

VII.

As regards proceedings not specially provided for in the following forms, any form being conformable to the letter and spirit of the law will be accepted, and if not so conformable will be returned for correction.

VIII.

A copy of the Act and the rules with a particular section marked, sent to any person making an inquiry, is intended as a respectful answer by the office.

IX.

Information as to subsisting registrations will not be furnished by the office, the registers and indexes being open for inspection free of charge.

FORM A.

DOMINION OF CANADA.

The Copyright Act.

Application for registration of Copyright. (Except copyright of Original Artistic Work.)

(By the Proprietor.)

I, of the
of in the of
hereby declare that I am lawfully entitled to the copyright of the (1)
entitled ' ' and that
the said (1) has been printed in Canada; and I
hereby request you to register the copyright of the said (1)
in my name in accordance with the provisions of the Copyright Act.

I herewith forward three copies of the said (1)

Signed at the day of
19 , in the presence of the two undersigned witnesses.

Witnesses:

}

To the Minister of Agriculture,
Ottawa.

DOMINION OF CANADA.

The Copyright Act.

Application for registration of copyright. (Except copyright of original artistic work.)

(By the Agent of the Proprietor.)

I, of the
of in the of
hereby declare that I am the duly authorized agent of
of the of in the
of
that the said is lawfully entitled to the Copyright of
the (1) entitled ' ' and that
the said (1) has been printed in Canada and I
hereby request you to register the copyright of the said (1)
in the name of the said in accordance with
the provisions of the Copyright Act.

I herewith forward three copies of the said (1)

Signed at the day of
19 , in the presence of the two undersigned witnesses.

Witnesses:

}

To the Minister of Agriculture,
Ottawa.

(1) Book, map, chart, musical composition, photograph, print, cut or engraving.

FORM B.

DOMINION OF CANADA.

The Copyright Act.

Application for registration of Copyright of original artistic work.

(By the Proprietor.)

I, of the
of in the of
hereby declare that I am lawfully entitled to the Copyright of the (1)
entitled that the said (1)
has been produced in Canada and I hereby
request you to register the Copyright of the said (1)
in accordance with the terms of the Copyright Act in my name. The following is a description of the said (1)

Signed at this day of
19 , in the presence of the two undersigned witnesses.

Witnesses:

To the Minister of Agriculture,
Ottawa.

(1) Original painting, drawing, statue or sculpture.

FORM B1.

DOMINION OF CANADA.

The Copyright Act.

Application for registration of Copyright of original artistic work.

(By the Agent of the Proprietor.)

I of the
of in the of
of the of in the
hereby declare that I am the duly authorized agent of
of that the said is lawfully
entitled to the Copyright of the (1) entitled '
' and that the said (1) has been
produced in Canada and I hereby request you to register the Copyright of the said (1)
in the name of the said
in accordance with the provisions of the Copyright Act.

The following is a description of the said (1)

Signed at the day of
19 , in the presence of the two undersigned witnesses.

Witnesses:

To the Minister of Agriculture,
Ottawa.

(1) Original painting, drawing, statue or sculpture.

FORM C.

DOMINION OF CANADA.

The Copyright Act.

Application for registration of Interim Copyright.

(By the Proprietor.)

I, of the
of in the of
hereby declare that I am lawfully entitled to the Copyright of the (1)
entitled and I hereby request you
to register the Interim Copyright of the said (1)
under the Copyright Act in my name
A copy of the title or a designation of the said (1) is
hereunto annexed.

Signed at the day of
19 , in the presence of the two undersigned witnesses.

Witnesses:

To the Minister of Agriculture,
Ottawa.

(1) Literary, scientific or artistic work.

FORM C1.

DOMINION OF CANADA.

The Copyright Act.

Application for registration of Interim Copyright.

(By the Agent of the Proprietor.)

I, of the
of in the of
hereby declare that I am the duly authorized agent of
of the of in the
of that the said
lawfully entitled to the Copyright of the (1)
entitled ' ' and I hereby request you to register
the Interim Copyright of the said (1) under the
Copyright Act in the name of the said
A copy of the title or a designation of the said (1
is hereunto annexed.

Signed at the day of
19 , in the presence of the two undersigned witnesses.

Witnesses:

To the Minister of Agriculture,
Ottawa.

(1) Literary, scientific or artistic work.

FORM D.

DOMINION OF CANADA.

The Copyright Act.

Application for registration of Temporary Copyright.

(By the Proprietor.)

I, of the
of in the of
hereby declare that I am lawfully entitled to the Copyright of the literary work entitled ' ' which is being preliminarily published in separate articles in a newspaper or periodical and I hereby request you to register the Temporary Copyright of the said literary work under the Copyright Act in my name.

A copy of the title of the said literary work and a short analysis thereof are hereunto annexed.

Signed at the day of
19 , in the presence of the two undersigned witnesses.

Witnesses:

}
}

To the Minister of Agriculture,
Ottawa.

FORM D1.

DOMINION OF CANADA.

The Copyright Act.

Application for registration of Temporary Copyright.

(By the Agent of the Proprietor.)

I, of the
of in the of
hereby declare that I am the duly authorized agent of
of the of in
of that the said is
lawfully entitled to the Copyright of the literary work entitled ' ' which is being preliminarily published in separate articles in a newspaper or periodical and I hereby request you to register the Temporary Copyright of the said literary work under the Copyright Act in the name of the said

A copy of the title of the said literary work and a short analysis thereof are hereunto annexed.

Signed at the day of
19 , in the presence of the two undersigned witnesses.

Witnesses:

}
}

To the Minister of Agriculture,
Ottawa.

No. 21.

IRISH INTERNATIONAL EXHIBITION.

London, March 31, 1908.

Sir,—In view of Canada's participation in the Irish International Exhibition, and in accordance with your instructions that your exhibition staff should make as creditable a display of Canada's natural products and resources as was made in Milan, and better, if possible, I had the necessary plans executed for a more spacious pavilion than Canada has had at any previous exhibition in which we participated. The dimensions of the pavilion were 200 feet long and 90 feet wide, and the architecture was a blending of Renaissance and Elizabethan styles which presented a very nice external appearance.

I am pleased to state that the staff carried out the decoration of the interior, and the installation of the exhibits in a very satisfactory manner.

The contract for the construction of this pavilion was given to Messrs. Humphreys, Ltd., builders, of London, who had obtained from the exhibition committee the sole privilege of constructing buildings on the exhibition grounds. The contractors executed their work to my satisfaction, and I am glad to say the Canadian pavilion at the Dublin exhibition was the first one practically ready to receive visitors. I beg here to cite an extract of the *Dublin Sunday Independant* on the occasion of the opening of the Canadian pavilion: 'The opening of the Canadian pavilion was the great event yesterday, and hundreds of visitors availed themselves of the opportunity of seeing the magnificent collection of the agricultural and mineral products of Canada which were here displayed. The pavilion has already been fully described in our columns, and it is only necessary to say now that it promises to be one of the most popular features of the entire exhibition.'

As was the case in Liège and Milan, the Canadian pavilion at the Irish International Exhibition was the centre of attraction, and the exhibition staff were kept busy giving information about Canada to the many visitors who had relatives in Canada or who were desirous to become settlers.

Many of the Irish people were under the impression that our climate was inhospitable and that we raised very little grain and few vegetables, and had practically no idea of the area of Canada as compared to their own country; but when they realized the fact that tomatoes and grapes thrive and ripen in the open air in Canada, and only do so in a very few favoured spots in Ireland, they would acknowledge that Canada's climate was better than it had been pictured to them. As it is well known, the bulk of the Irish emigration was directed to the United States, and being aware that it was the desire of the Dominion Government to turn this movement towards Canada, or, at least, to show these people that Canada was a better field for agriculturists than the United States, we particularly drew the attention of the visitor to our actual resources and the possibilities of our agricultural, horticultural, mineral and manufacturing industries. Warning was given that Canada desired particularly soil tillers, to open up and cultivate the vast areas of arable lands she possessed and that success was practically assured to the intelligent and thrifty farmer. We held no inducement for the emigration of tradesmen and people engaged in a profession, informing them that there was already a lively competition in those lines in Canada. As an evidence that Canada wanted emigration to be directed to her borders and did not desire to deceive those who might choose to settle in its domains, two placards were conspicuously placed at the main entrance, one reading, 'Caution. Whilst reading matter in

this building is based on facts, do not be influenced by it. Canada wants settlers, but she does not want people who are satisfied with their present conditions to leave their native land.' The other reading; 'Attention. If it is your intention to go to America, remember that United States farmers are going to Canada in great numbers. Canada offers to settlers better inducements than any other country in the world. Canada will receive you with open arms instead of imposing on you an alien tax of $4 per head.'

Whilst many leading men in Ireland deplored the drain made by emigration, they invariably said: 'If our people will leave home we are satisfied there are better prospects in Canada for them than in any other country.'

Besides the visit made by Their Majesties the King and Queen, we had His Royal Highness the Duke of Connaught, Lord and Lady Aberdeen, and many notabilities, who all expressed their appreciation of Canada's exhibit.

I might also quote here the sentiments of the *Londonderry Sentinel,* which said: 'Extremely popular is the handsome Canadian pavilion at the Dublin International Exhibition, and a great surprise to those who enter its portals expecting to see nothing out of the ordinary. More taste and ingenuity it is safe to say have been bestowed upon the decoration of this pavilion than upon any other in the exhibition. One leaves the Canadian pavilion with the conviction deepened that they who insist on the potentiality of the Dominion do not exaggerate.'

According to your instructions, the same policy followed at the Milan and Liège exhibitions was followed in Dublin. Canada's exhibition here was strictly an exhibition of Canada's natural products, and all displays which could be looked upon as provincial features were carefully avoided. I may say that this manner of exhibiting Canada's products has met with the unanimous approval of all the Canadian visitors at our pavilion.

I can truly say that the Dublin exhibition was a busy season for your exhibition staff. The inquiries received were constant and numerous, and I have every reason to believe that the result of Canada's participation at the Dublin exhibition will be practical and beneficial; and from conversations I had with Canadian emigration officials in England and Ireland, I understand that it has already largely affected the tide of emigration of the Irish people to the United States and directed it to Canada.

I am happy to express my satisfaction for the kind and courteous treatment received from the executive committee of the Irish International Exhibition. I may say that this exhibition was one of the best managed that I have had the pleasure to be connected with.

Some time after the closing of the Dublin Exhibition, I left for London to supervise the construction of the Canadian pavilion at the Franco-British Exhibition, plans of which had been forwarded to the contractors two months previously. After a great deal of correspondence with the executive of the Franco-British Exhibition, and annoying delays of the London City and County Council in finally adopting the plans, which I had to modify several times to suit their demands, the ground was broken and the construction of the Canadian pavilion at the Franco-British Exhibition, Shepherd's Bush, was actually begun the last week of February.

Trusting that the results obtained by Canada from her participation at the Dublin International Exhibition will realize your expectations and prove to be one of the best undertakings of the Canadian Government for the prosperity of the country.

I have the honour to be, sir,

Your obedient servant,

WM. HUTCHISON,

Canadian Exhibition Commissioner.

The Honourable
The Minister of Agriculture,
Ottawa.

No. 22.

REPORT OF CANADIAN COMMISSION, NEW ZEALAND INTERNATIONAL EXHIBITION.

Name.—New Zealand International Exhibition.

Place.—Hagley Park, Christchurch, New Zealand.

Dates.—November 1, 1906, to April 15, 1907.

Size.—Area of exhibit buildings, 30 acres. Area of gardens and experimental plots, 70 acres.

Cost of Building.—£90,000.

Attendance.—Total, 1,966,861, a daily average of 13,949 for the (141) days on which the exhibition was open.

OPENING CEREMONIES.

The exhibition was opened with elaborate ceremonies on the morning of November 1, 1906, in the presence of Their Excellencies Lord and Lady Plunkett, Sir Joseph and Lady Ward and other prominent persons. Speeches were delivered by the governor and premier, in the course of which reference was made to the excellence and size of the Canadian exhibit, and cables of congratulation and thanks were exchanged between Sir Joseph Ward and the Right Honourable Sir Wilfrid Laurier.

The installation and decorating of the Canadian court was completed on the evening of October 31, 1906.

CANADIAN EXHIBIT.

The Canadian exhibit was located in the main building and occupied an area of 14,000 square feet, furnished by the exhibition management at a cost of £1,000. It may be claimed for Canada that her display covered more space than that of any other exhibitor.

Canada's part in the exhibition was a more prominent one, and it may be said without undue pride or exaggeration that her exhibit attracted more attention and elicited more favourable comment than that of any other country exhibiting.

The colour scheme and general plan of the installation of the Canadian exhibit was quite new to the people of that part of the world, and was a feature which attracted so much attention that it became, and continued to be, a subject of universal comment.

To attempt herein to speak of the number and variety of compliments paid to Canada in connection with the part she took at the exhibition would seem effusive and self laudatory, but it might not be out of place to quote the Commissioner for South Australia in his report to the Governor of New South Wales:—

'Canada had a court which was the admiration of all visitors. It may not be out of place to state that Canada sent a consignment of apples which were thirty days on the voyage and were placed in cold storage on arrival. Every week a case was taken out of the storage and placed on display, and these apples retained their freshness and flavour for five months. The success of Canada is that it is always prepared for exhibitions. The Exhibition Bureau is up-to-date with everything, and as soon as a decision to exhibit is arrived at, the officers of the department are ready to proceed to any part of the world, and all is Canada. There are no separate provinces allowed to form their own commissions, and the result is that the advertisement the Dominion of Canada gets is always worth the money expended. Had the whole of the Australian courts

been combined (like Canada's), and a uniform style of decoration and arrangement followed, the cost would have been much less and the advertising benefits much greater. Unfortunately, Australia was divided into sections apart from each other, in striking contrast to the Canadian court, where all its provinces were merged into one Canada, and where its exhibits of products, photographs of industries, and illustrated books and pamphlets descriptive of the soil, climate and conditions of life made Canada the most widely advertised country throughout Australasia.'

MINERALS.

We were able to utilize, without extra expense, a duplicate collection of minerals, the property of the Exhibition Branch, held in store at Ottawa, besides the necessary number of glass show cases to properly display the same. The Canadian mineral exhibit was the most comprehensive one of its kind at the exhibition, and our scheme of showing the resulting products as well as the ore or mineral as it came from the mine, was most favourably commented upon. Geologists, students of geology and the general public paid special visits to the exhibition from all parts of Australasia, for the express purpose of examining this exhibit which had been most extensively advertised in the press throughout the colony and Australia.

AGRICULTURAL PRODUCTS AND FRUIT.

A section of the court was set aside for a display of fresh apples, preserved fruits, maple sugar, maple syrup, honey, potted cheese, condensed milk and cream, biscuits, cereal foods, whiskey, potatoes, besides agricultural and dairying machinery. Two hundred and ten cases containing (39) varieties of apples grown in British Columbia, were brought over in cool storage. These were arranged on plates, and renewed from time to time as required. The quality and variety of the apples proved an eye-opener to the visitors, who declared them to be superior in every way to those of California, of which a large number are imported each year. The difference in the geographical position of New Zealand as compared to Canada makes it possible for British Columbia fruit and vegetables to be imported at a time when supplies are almost exhausted in New Zealand. As a result top prices are obtainable; for instance, California apples sold freely during September and October of last year at 8d. per lb., while potatoes brought 6d. per lb. at the same time. The existing direct steamship service does not afford cool storage accommodation for transportation of perishable cargo. The installation of cool storage chambers on this line would be the means of increasing trade in both directions. For instance, fruit and vegetables could be handled for the New Zealand market, while New Zealand meat products could be exported to Canada.

Pure maple syrup is absolutely unknown in New Zealand, and our exhibit of the genuine Canadian product aroused much interest. During Easter week we prepared over two tons of maple sugar, putting it up in small cakes of 2 oz. each, and a general free distribution was made to the visitors during that week. Each cake was neatly wrapped up in white paper bearing the following inscription:—

MAPLE SUGAR
WITH
EASTER GREETINGS
FROM
CANADA.

N.Z.I.E. 1906-7. (Sample enclosed.)

The prime object of our participation at this exhibition was to promote trade relations between the two colonies. We found the feeling throughout New Zealand very

friendly towards Canada and there seemed to be a very general desire for closer trade relations.

The time proved a most opportune one, coming as it did soon after the inauguration of a direct steamship communication between Canada and New Zealand.

One of the most popular things among all classes there is the proposed 'All Red Route' and the mere mention of it in a public way will always bring a spontaneous and hearty response.

MANUFACTURES.

About seventy-five per cent of the space was devoted to the display of manufactured articles, and these were neatly arranged throughout the court in such a manner that visitors were enabled to pass freely among them and examine each article from all sides. The various exhibits bore signs giving the name of the manufacturer in Canada, and the name and address of the New Zealand agent. To each article was attached a neat sign in green and gold, impressing upon the visitors the fact that it was Made in Canada.' The Canadian Government, through the Exhibition Branch of the Department of Agriculture, sent out thousands of circulars to manufacturers and advertised freely in the Canadian press, the fact that it was prepared to accept articles made in Canada for display in the Canadian court on the following liberal conditions:—

The Canadian Government offered free transportation, free space, free installation, free care and free attendants and to negotiate for the appointments of agents where the exhibitor was not already represented. About (75) manufacturers responded to this offer, and about (350) tons of exhibits were collected from this source. Arrangements were made with the Alley Steamship Company for the transportation of the exhibits to New Zealand, and the goods were assembled at different centres in Canada and forwarded to Vancouver, where they were shipped by the ss. *Pondo* and arrived in Christchurch about the middle of October.

From reports received from agents in New Zealand and from manufacturers in Canada, a large business has been done as a direct result of the exhibition. Business in lines already introduced has been greatly stimulated, and several lines hitherto unknown in this market have been introduced. Other lines not exhibited were inquired for, and as a result of the information given a large amount of new business was opened up.

A specific report giving full details as to the requirements of this market in the several articles of Canadian manufacture that could be sold in New Zealand might be prepared from an examination of the stocks now being carried by the leading wholesale houses in the different centres.

The manufactured articles displayed in the Canadian court consisted of:—

Mineral water.
Churns.
Rubber goods.
Boots and shoes.
Cereal foods.
Wall paper.
Printing paper.
Manufacture of pulp.
Biscuits.
Carriages.
Wagons.
Motor cars.
Bicycles.
Office furniture.
Chairs.
Typewriters.
Potted cheese.
Butter-making machinery.
Metallic roofing.
Nails.
Stoves.
Ranges.
Oil stoves.
Enamelled ware.
Kitchen utensils.
Filing devices.
Wind mills.
Wooden pipe.
Ladders.
Wooden ware.

Tables.
Canoes.
Pulleys.
Wheels.
Pianos.
Organs.
Butchers' skewers.
Incubators.
Wicks.
Tweeds.
Whiskey.
Carriage bodies.
Musical instruments (string and brass).
Bird cages.
Wire work.
Oils.
Salt.
Manufactures of mica.
Manufactures of asbestos.
Petroleum products.
Shelf hardware.

The location and construction of our court afforded us ample wall space for the display of pictures of Canadian scenery, charts, maps, &c. Eight large oil paintings showing the advancement of a settler in the Canadian Northwest were of special interest to visitors. In addition to this we had large photos of the Grand Trunk Railway and the Canadian Pacific Railway, showing some of the best natural scenery and physical features along their respective lines. Seventy photos, the property of the Exhibition Branch, showing scenes from different parts of Canada, were also displayed.

LITERATURE.

We were careful not to give the impression that we were sent to New Zealand to do emigration work, but notwithstanding that fact we had hundreds of inquiries regarding the possibilities for settlers in Canada. We had a large number of hand-books entitled 'Dominion of Canada,' these we gave away to responsible parties, and distributed to the different libraries, Chambers of Commerce, &c., throughout the colony.

VISITORS.

We had several distinguished visitors at the Canadian court: among them were Lord and Lady Plunkett, Sir Joseph and Lady Ward, and all the members of the cabinet, the mayors of the different cities, the Lord Mayor of Melbourne, all of whom were loud in their praises of the comprehensiveness of the exhibit and the attractiveness of the arrangement. Our thanks are due to the New Zealand Government, mayor and deputy mayor of Christchurch, executive commissioners, general manager, railway and customs officers, Mr. Th. de Schryver, representative of the Canadian Manufacturers' Association, the Press of New Zealand, and many others whom we came in contact with during the term of the exhibition.

AWARDS.

Owing to irregularities in connection with the judging of the exhibits, we deemed it advisable to withdraw the individual exhibits in the Canadian court from competition. The wisdom of this step is now quite apparent, for the awards are not considered of any value, and in some cases where offered have been absolutely refused.

CLOSING CEREMONIES.

The closing ceremonies took place on the evening of April 15, 1907, on which occasion the New Zealand Government, wishing to recognize in some way the manner in which the Canadian Government had contributed to the success of the exhibition by its excellent exhibit, caused four special premiums to be issued as follows:—

1st. Extra Special Award and Gold Medal for general installation.

2nd. Special Award and Gold Medal for agricultural products, fruit, maple sugar, honey, &c.

3rd. Special Award and Gold Medal for comprehensive mineral exhibit.

4th. Special Award and Gold Medal for collective exhibit of manufactured articles.

If we may be permitted to make a digression from the affairs of the exhibition, we would like to embody in this report a few observations on the very unsatisfactory state of transportation between the two countries. Everywhere in New Zealand we heard complaints about the length of time it required to get goods from Canada and the uncertainty as to when they would arrive. This interfered very much with the placing of orders with Canadian houses, and in some cases increased to almost a hardship the bulk of the orders placed. This latter is especially true in the matter of printing paper. Four-fifths of the print now used in New Zealand is of Canadian make, and most of the consumers are compelled to carry very large supplies to insure them against running out before the next consignment comes to hand, so uncertain is transportation. In the matter of field and garden seed, one importer told us that his firm could not afford to take the chances of the Vancouver route and had all their Canadian stock sent round by London.

Still more unsatisfactory are the mail facilities. Trade in this age is largely dependent upon postal and cable correspondence. Between here and New Zealand the latter is very expensive, while the former is very unreliable as to date of arrival and delivery.

Permit us also to intimate that among the native products of New Zealand that came under our observation one at least, in our opinion, might be introduced into Canada with great advantage to the latter country. We refer to the native flax plant. But a few years ago many of the low-lying districts in both the north and south islands were looked upon as useless wastes. Now many of these waste places have been converted into the most profitable lands in the country simply by the introduction of the native flax plant. A study of its nature and habits has led us to the conclusion that it would thrive quite as well in the low lands of British Columbia and Southern Ontario, where the frosts of winter are not so severe as further north. The plant requires no cultivation; when once established in the soil it takes care of itself to the exclusion of all other vegetation, and its return per acre is enormous.

T. H. RACE,
W. A. BURNS,
Joint Commissioners.

No. 23.

TOBACCO.

(Report of F. Charlan.)

OTTAWA, March 31, 1908.

SIR,—I have the honour to submit the following report of the work done by the tobacco division, for the year ended March 31, 1908.

The latter part of the spring of 1907 was spent in estabishing trial plots in both provinces of Quebec and Ontario, and supervising the operations of preparing and seeding seed-beds at the Central Experimental Farm.

The varieties of tobacco grown at the experimental farm were the Comstock Spanish and Connecticut Seed Leaf. The Connecticut made a slow growth, on account of the cool weather which prevailed throughout the season. The seed used was not, apparently, from a selected strain. It was purchased from a common dealer with no better guarantee of quality than is generally offered in such case.

The plants were poorly developed, the tissue was rather coarse, and the product, being unsatisfactory, was disposed of by retail sales as soon as it was cured, as it was not thought advisable to carry the experiment as far as the sweating stage.

The Comstock variety comprised two different lots. One lot was grown from seed imported two years previous, the other from seed produced in Canada, grown from the first, the year before. The object was to find out whether the seed grown in Canada would give products similar to the imported seed.

There was practically no appreciable difference between the products of the two lots. The season was rather unfavourable (spring late and rainy, summer short and dry, fall cold and damp), and the products obtained were poorly developed, like the Connecticut, but the texture was fairly good. However, so far as the appearance of the plants, the rapidity of growth, and the shape of the leaves are concerned, the results were identical, and we may conclude from this experiment that seed grown in Canada will yield products similar to imported seed, and well adapted to certain requirements of our industry.

The yield suffered greatly from the lack of development of the products. While the yield per acre reached 1,800 lbs. in 1906, the yield of 1907 did not go higher than 1,200 lbs. It should be stated here, however, that the piece of land on which the crop of 1906 was grown was heavily manured in the fall, while the crop of 1907 was grown on corn stubble, unmanured, and already seeded to oats which were ploughed in shortly before the setting out of the seedlings. This was on account of the fact that at the last moment the place of the experimental plot had to be changed, and the field which had been specially prepared for the growing of tobacco had to be abandoned.

Owing to the poor development of the products and the large number of diseases noticed, we gave up the idea of saving seeds from the crop.

The experimental plots established in the province of Quebec were in the parishes of St. Jacques l'Achigan, Montcalm county and of St. Cesaire, Rouville county.

The object of the experiment in the county of Montcalm was to determine the influence of the nature of the soil on the quality of tobacco. All things being equal, it was to be expected that the light clay soils south of St. Jacques would yield smaller and coarser products than the loamy and light soils at the north part of the parish. But the conditions prevailing in the year 1907 do not allow us to form an opinion on

this matter. The tobacco grew slowly, did not ripen well and yielded a very large proportion of products with a thick tissue.

However, judging from the results of experiments carried on at St. Jacques—results confirmed by the experiments of St. Cesaire, as will be seen later—it would appear that fairly close planting gives a better yield in weight than planting wide apart, the tissue is finer and of a better quality, which favours rapid drying, and the yield of 1,000 lbs. per acre which has so far been the average for the Comstock grown in Canada, can be easily made much larger. On the experimental plots of St. Jacques in 1907, in spite of the unfavourable weather conditions, the yield per acre was between 1,000 to 1,200 lbs. per acre.

Two varieties, little known in the province of Quebec, were also tried in 1907, in the parish of St. Jacques.

The first of these, 'General Grant' proved rather early and yielded a well developed product, of fine texture, with a bright colour and easy to cure. This variety called a great deal of attention at the St. Jacques exhibition, held last spring, in which several tobacco manufacturers participated. The 'General Grant' might take the place of the Burley, which does not ripen well in this part of Ontario, owing to the weather conditions.

The second variety, 'Big Ohio,' yields large size products with a somewhat prominent mid-rib, apparently suitable for pipe use, but rather slow in maturing, although earlier than the Connecticut. If this earliness can be maintained, the farmers who are looking for heavy yields in weight and who are now growing the Connecticut for this purpose, would do well to drop this variety, which is very slow in ripening, and adopt the 'Big Ohio.'

Two growers of St. Césaire who had selected for this experiment an alluvial piece of land, much higher than the soil of St. Jacques, obtained yields varying in weight from 1,200 to 1,400 lbs. These yields, much higher than those of St. Jacques, lead us to think that in some parts of Canada the land is not kept in as good a state of fertility as is desirable. Thus a new field for experiments opens to our division: the maintenance of the fertility of the soils on which tobacco is grown and the kinds of fertilizers.

The trials of Comstock Spanish at St. Jacques de l'Achigan and St. Césaire put an end to a controversy which has been going on for two years, as to whether this variety of tobacco could give satisfactory yields in weight. The yield of 1,600-1,800 lbs. per acre obtained in 1906—a favourable year—on the experimental farm at Ottawa seemed to many Canadian farmers an impossibility. In 1907, at St. Césaire, in spite of the poor development of the products, the weight of the crop reached as high as 1,500 lbs., and it is generally conceded that in a normal year, the yield obtained at the experimental farm in 1906 could be duplicated on a number of farms.

A trial in hybridizing, undertaken by a farmer of St. Jacques, met with partial success. Although the weather was rainy and cold when the artificial fertilization was effected, the capsules grew well and apparently ripened well, but the seed obtained, sown in the spring of 1908, did not germinate. It should not be inferred from this that the hybrid 'Havana Seed Leaf—Canelle' is sterile, but simply that the seed did not ripen perfectly, and this is further proved by the fact that seed of another variety, not crossed, supplied by the same farmer, gave a yield of only 25 per cent in a germination trial—a yield much below the average yield of tobacco seed.

The object of the trials with Seed Leaf varieties in Essex county, in 1907, was simply to ascertain what these varieties would do under the climate of this part of Canada.

The trials were not by any means conclusive, and besides, serious mistakes were made which considerably interfered with the results.

The weather conditions were no more favourable in Ontario than in the counties of Rouville and Montcalm, Que., and at the Ottawa Experimental Farm. Considerable injury was done by the variegated cutworms, and some crops also suffered from the caterpillars. Generally speaking, the products were cut over-ripe, and therefore,

their elasticity and their colour were not so good, nor were they in so good a condition for sweating. This mistake, which might have been avoided, had the staff of the tobacco division been larger, is such as might well be expected from farmers familiar with the growing of Burley only, a variety which is cut when the ripening is far advanced and when the crop takes on a light yellow hue.

A variety of the 'Big Havana' kind was tried by an Ontario grower, from imported seed. The product is thick, fairly well developed, but showing a tendency to remain green in curing. Sweating improves it considerably, and develops a straight and pleasant aroma. Athough a little strong, the product may be considered as a filler of good quality. We propose to experiment further with this variety if a sufficient quantity of seeds can be secured.

Last fall, I had the opportunity of visiting the valley Okanagan, B.C., where the industry of tobacco growing has been rapidly developing for the last few years.

The progress made by the industry in such a short time is really surprising. I was much pleased also with the quality of the product. The aroma is very fine, very agreeable, much like that of some Havanas. This tobacco would make an excellent filler. The seed is imported from Cuba and renewed every four years.

The Comstock Spanish which is also grown, does not seem to have as bright a future as the Cuban varieties. Owing to the dry climate of the Kelowna valley, it is difficult to obtain products sufficiently well developed and fine enough for the manufacture of binders or wrappers. Irrigation may possibly correct this defect, but it will be necessary to devise a process of irrigation sufficiently economical.

While in Kelowna, I devoted some of my time to the study of various practical questions, and particularly, a program of experiments which will be undertaken in 1908.

I also visited some of the tobacco plantations in Connecticut, Pennsylvania, Wisconsin and Virginia, during the growing period. To complete my inspection a visit to the packing houses later in the season, when the crop was manipulated, would have been necessary, but I could not spare the time to do so, nor could I visit other tobacco producing states such as Kentucky, Ohio and Maryland, as I intended. These trips gave me the opportunity to become acquainted with some of the experts of the U.S. Government, and enabled me to secure some choice seed by means of which I hope we shall be able to introduce some more profitable varieties into Canada.

In the course of my trip, I noticed that the production of seeds was not always done with the necessary care, and I came to the conclusion that we should strive in future to produce our own seeds in Canada, instead of depending for the same upon foreign seedsmen, not always as scrupulous or as careful as they might be. By producing our own seeds we will also get acclimatized varieties.

The growing experiments of 1907 show that some varieties of American tobacco alter very slowly, if at all, under the climate of Canada. The first generations secured from successive crops of Canadian seeds are sufficiently similar to the ordinary American standards. On the other hand, by careful selection, we may perhaps, as intimated, above, fix truly Canadian varieties. The tobacco division has started in this work, beginning with the American varieties which show the greatest improvement.

The year 1907 was marked by an important event: the readjustment of duties on tobacco imported and manufactured in Canada.

All interested in the future of Canadian tobacco hope that these changes will enable the Canadian tobacco to compete successfully against its rival, the American tobacco. Packers have already begun work, and large quantities of light tobacco from the crop of 1906 have been treated. These products after treatment, have proved very satisfactory, and it is probable that a number of manufactures which have so far remained rigidly closed, will be thrown open to some of our Canadian tobacco, when the quality of the latter is better known.

This division proposes to carry some experiments in sweating, which, although remaining for some time at least, in the theoretical part of the laboratory, may nevertheless prove interesting, in view of the lack of definite information on the products.

Towards the end of winter, arrangements were made for a series of lectures in the chief tobacco growing districts of the province of Quebec, with a view to diffuse information on the methods of selection and the use of suitable rotations. I found many evidences of the progress made during the last two years by growers of Canadian tobacco, and especially of light tobacco, the products of which on account of the improvements in the methods of growing, will be called upon to supply the packing industry.

On March 25, 1908, I was called to give evidence before the Committee of Agriculture and Colonization. I seized this opportunity to submit to the members of this committee some samples of our home products, as well as some cigars manufactured with Canadian tobacco. Judging from the satisfaction of the audience, I do not hesitate to say that we are making decided progress, and that some of our Canadian products are of excellent quality, and quite suitable for manufacturing purposes. The tobacco division was called upon to prepare the exhibit of Canadian tobacco for the Franco-English Exhibition, and the manufacturers to whom we applied gave us conclusive proofs of their eagerness to help the interests of the Canadian tobacco industry.

I have the honour to be, sir,

Your obedient servant,

F. CHARLAN,

Chief of the Tobacco Division.

The Honourable

The Minister of Agriculture,

Ottawa.

INDEX TO APPENDICES.

PUBLIC HEALTH.

PAGE.

No. 1 Report of the Director General of Public Health, F. Montizambert, I.S.O., M.D., Ed., F.R.C.S.E., D.C.L. 67
Grosse Isle, Que. 70
Halifax, N.S. 71
St. John, N.B. 71
Sydney, N.S. 71
Louisburg, N.S. 71
Chatham, N.B. 71
Charlottetown, P.E.I. 71
William Head, Victoria, B.C. 71
Vancouver, B.C. 71
Leprosy generally. 71
Tracadie, N.B., Lazaretto. 71
D'Arcy Island, B.C., Lazaretto. 71
Public Works (Health) Act. 71
No. 2. Report on St. Lawrence Quarantine Station. 72
3. " Halifax, N.S., Quarantine Station. 74
4. " St. John, N.B., Quarantine Station. 75
5. " North Sydney, N.S., Quarantine Station. 76
6. " Louisburg, N.S., Quarantine Station. 77
7. " Charlottetown, P.E.I., Quarantine Station. 77
8. " Chatham, N.B., Quarantine Station. 78
9. " Victoria, B.C., Quarantine Station (William Head). . . . 78
10. " Victoria, B.C., Quarantine Station. 82
11. " Vancouver, B.C., Quarantine Station. 82
12. " Tracadie, N.B., Leprosy Station. 83
13. " Public Works (Health) Inspector (C. A. L. Fisher). . . . 84
14. " Public Works (Health) Inspector (F. F. Chamberlain, M.D.). 100

MISCELLANEOUS.

No. 16. Regulations relating to Mange. 111
17. Canadian Quarantine Regulations. 114
18. Regulations governing the Inspection of Meats, 1907. 130
19. Rules and Forms under Trade Marks and Designs Act and Timber Marking Act. 139
20. Rules and Forms under the Copyright Act. 142
21. Report on the Irish International Exhibition. 147
22. Report of Canadian Commission, New Zealand International Exhibition. 149
23. Report on Tobacco. 154

REPORT

OF THE

DAIRY AND COLD STORAGE COMMISSIONER

FOR THE

Year ending March 31, 1908

Introduction.

Part I.—Dairying Division.

Part II.—Report of the Assistant Dairy Commissioner.

Part III.—Fruit Division.

Part IV.—Extension of Markets Division.

Part V.—Cold Storage Division.

Part VI.—Visit to Great Britain and Holland.

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1908

[No. 15a—1908.]

APPENDIX

TO THE

REPORT OF THE MINISTER OF AGRICULTURE

BEING THE

REPORT OF THE DAIRY AND COLD STORAGE COMMISSIONER

OTTAWA, March 31, 1908.

To the Honourable
The Minister of Agriculture.

SIR,—I have the honour to submit my report, as Dairy and Cold Storage Commissioner in your department, for the year ending March 31, 1908.

Although the work of the several divisions of this branch is closely related and cannot be separated fully, it is presented for the sake of clearness in six parts as follows:—

Part I. Dairying Division.

Part II. Report of the Assistant Dairy Commissioner.

Part III. Fruit Division.

Part IV. Extension of Markets Division.

Part V. Cold Storage Division.

Part VI. Visit to Great Britain and Holland.

Dairying.—The branch has not conducted many lines of active dairy work during the year, but there is always a large amount of correspondence arising out of various matters connected with the industry. Your Commissioner took a strong stand at the beginning of the season against the practice of shipping cheese to Great Britain in a green condition, and was able to quote from opinions, given by importers in the old country, to the effect that the practice, if continued, would be detrimental to the cheese industry, by curtailing the consumption of cheese and thus lessening the

demand for it. An effort was made to impress the factorymen with the importance of the question, by means of circulars sent out, and addresses delivered at some of the cheese boards. I am pleased to report that these representations were followed by improvement in some districts.

The Cow Testing Associations have been continued, and some very interesting figures will be found in Part I, which have been compiled from the records by Mr. C. F. Whitley, who has charge of the details of this work.

Part I. also includes an interesting and instructive report by Mr. George H. Barr, who was acting official referee of butter and cheese at Montreal during the season. Mr. Barr, with his good judgment and thorough practical knowledge of dairy work, is proving himself to be a very useful and reliable officer.

The Assistant Dairy Commissioner, Mr. J. C. Chapais, has written a report of his year's work, principally in the French speaking districts of the province of Quebec, where he has addressed numerous dairy and fruit meetings, and visited several of the factory syndicates in company with the inspectors appointed by the Dairymen's Association of the province of Quebec. Mr. Chapais has also given some assistance in the way of lectures at the St. Hyacinthe Dairy School. Mr. Chapais has his residence and office at St. Denis (en bas), Que.

Fruit.—That part of the report which deals with the work of the Fruit Division has been prepared by Mr. A. McNeill, chief of the division. Mr. McNeill's energy, devotion to duty and thorough grasp of the fruit situation have enabled him to accomplish much for the benefit of the industry. He has been given a pretty free hand in dealing with the work assigned to him. The Dominion fruit inspectors report to him and carry on their work under his immediate supervision. He has also handled the monthly Fruit Crop Report, issued by this branch.

The fruit inspectors, with the experience of previous years to help them, have covered more ground than in any previous year, as a reference to Part III. of this report will show. The position is a difficult one, often unpleasant, but I have reason to believe that the inspectors, as a whole, have performed their duties in a creditable manner. The season was an extraordinary one and the fruit inspection presented unusual difficulties. The very nature of the work precludes the possibility of pleasing every person.

Judging from the experiences of the past year, it would seem to be necessary to increase the staff of fruit inspectors before the beginning of another season.

Extension of Markets.—Part IV. of this report, in which is presented the work of the Extension of Markets Division, has been prepared by Mr. W. W. Moore, chief of that division. Under this head come the inspection of the iced car services, the cargo inspection at Canadian and British ports, and any other work which may be undertaken with a view of improving the handling and transportation of Canadian perishable products, and the extension of the markets for such products.

The work of the division is organized and conducted on the theory that the surest and best way to extend the market for any product is to deliver to the customer a first class article in the best possible condition.

The grower or manufacturer may produce fruit, butter, cheese, &c., of the very choicest quality, but if it is spoiled in the handling, or in transit to the consumer, the skill and care which may have been exercised in its production go for nothing.

It is only fair to acknowledge the capable manner in which Mr. Moore has performed his duties as supervisor of the work of this division. The degree of efficiency which has been attained may be credited in a large measure to his thoroughness and good judgment. Having had an opportunity during the year of investigating, on the spot, the work of the cargo inspectors in Great Britain, I desire to put on record my appreciation of the faithful and efficient manner in which their duties have been performed. Mr. A. W. Grindley, the chief inspector, has served the department well in other ways, notably in connection with the purchase of seed grain for the Northwest.

Cold Storage.—The routine administration of 'The Cold Storage Act' of the session of 1906-7 having been assigned to this branch, has naturally increased the work and the importance of the Cold Storage Division. The division also deals with the bonuses for creamery cold storage, and the arrangement of the iced car and other cold storage services. Part V. of this report, which covers cold storage, has been written with a view of giving some information to producers of food products rather than to the cold storage engineer or expert. We have not been carrying on any work during the year calculated to furnish new data on the subject. We hope to make some tests and experiments during the coming season which should be of general interest.

Mr. J. G. Bouchard, who has been attached to the Cold Storage Division as Inspector of Creamery Cold Storages in connection with the payment of bonuses, has also rendered good services as a creamery and butter making expert.

Mr. R. J. Cochrane, who was connected with cold storage projects for some years before joining the service, is now attached to the Cold Storage Division.

Visit to Great Britain and Holland.—Having been appointed Canadian Government representative to the Third International Dairy Congress at The Hague, Holland, September 16 to 20, I took advantage of the occasion to visit the chief produce markets in Great Britain for the purpose of keeping in touch with the situation, and the position of Canadian produce on those markets. I also availed myself of the opportunity which a visit to Holland afforded, of spending a few days in the country districts for the purpose of studying the methods of intensive dairy farming which are followed there. A report on the Dairy Congress, some impressions of Holland, and information gathered in Great Britain, will be found in Part VI.

ACKNOWLEDGMENTS.

It is my pleasure to again bear testimony to the faithful work done by the officers and employees of this branch of your department. Their loyalty, devotion to duty, and general diligence have made the matter of maintaining proper discipline and efficiency exceedingly light and easy.

In connection with my visit to Great Britain, I am indebted to Lord Strathcona, the High Commissioner for Canada, and the Secretary, Mr. W. L. Griffith, Esq.; to Messrs. W. A. MacKinnon, Bristol, P. B. Ball, Birmingham, and P. B. McNamara, Manchester, Trade Commissioners for the Department of Trade and Commerce; to officials of the Department of Agriculture and Technical Instruction for Ireland; and to the National Cider Institute for assistance in furthering my enquiries.

I also wish to record my appreciation of the valuable aid received from *The Journal of Commerce,* and *The Courier,* Liverpool; *The Guardian* and *The Grocers' Review,* Manchester; *The Herald, The Scottish Trader,* and *The Scottish Farmer,* Glasgow; *The Grocer, The Morning Post,* and *The Canada Gazette,* London; and *The Western Dairy Press,* Bristol. The columns of these prominent journals were freely opened to reports of meetings; they contained many kindly editorial comments, and I was asked to furnish for publication several special articles dealing with Canadian trade, and in line with the object of my mission.

I have the honour to be, sir,
Your obedient servant,

J. A. RUDDICK,
Dairy and Cold Storage Commissioner.

REPORT

OF THE

DAIRY AND COLD STORAGE COMMISSIONER

FOR THE

FISCAL YEAR ENDING MARCH 31

1908

PART I.—DAIRYING DIVISION.

TABLE OF CONTENTS.

The Season of 1907—Decline in Exports—Increased Home Consumption—Official Referee of Butter and Cheese at Montreal—Identification Marks on Cheese—The Dairying Industry, A Lecture—Statistics of Dairying—Cow Testing Associations —Dairy Records.

PART I.—DAIRYING.

THE SEASON, 1907.

The season of 1907 was marked by very dry weather and consequent shortage of feed in some of the most important dairy districts. The scarcity prevailed during August and September, when the cows were on pasture, and has been severely felt during the winter months. Some farmers found it necessary to reduce the size of their herds, because of their inability to provide sufficient winter feed. The poorest cows were naturally the ones disposed of, and as the poorest cows in the average herd are often unprofitable, the loss may not prove to be as great as it may have appeared to be.

It is to be hoped also that dairy farmers will realize the advisability of providing against dry seasons by growing more corn. Previous to 1907, we have had a succession of good years, which has probably engendered a feeling of security that is not warranted by average climatic conditions. Apart from being an insurance against short pasturage or failure of the hay crop, corn is the cheapest and best winter feed which can be provided in the principal dairy districts, especially if preserved in the form of silage. If the lesson which has been taught by the experiences of 1907 has been learned by the dairy farmers in the affected districts, it will in the end prove to have been one of those proverbial 'blessings in disguise.'

The high level of prices which prevailed, especially for cheese, was some compensation for the shortage in the milk, so that on the whole, the year has been a fairly satisfactory one.

The relatively high prices paid for cheese had the effect of inducing many of the combined factories to continue to make cheese instead of butter. This fact, coupled with the increasing home demand, has resulted in materially reducing the exports of butter, so much so that the record for the season of 1907 is the lowest for many years. This will be a decided disadvantage if the exports are to be revived in the future, because much lost ground will have to be recovered; but it is doubtful if we shall have much surplus for export as long as prosperous times and the present rate of immigration continue.

DECLINE IN EXPORTS.

Disappointment has been expressed in some quarters at the slight falling off in the total exports of dairy produce, which is taken as indicating a decline in the industry. This is a mistake which arises from the habit of estimating the progress of the industry upon the export end of the business, instead of upon the total production. That basis served fairly well during the years when the annual growth of population was comparatively small, but in recent years, for obvious reasons, it has proved to be less reliable. The increased prosperity of the people generally has also been a somewhat indeterminable factor, but there is no doubt that butter is spread on the bread much thicker when the family exchequer is in a flourishing condition than it is when funds are low.

INCREASED HOME CONSUMPTION.

A fair estimate of the increase in the value of the home consumption of butter, cheese and milk for 1907 over that of 1900 places it at $10,000,000. If this amount

were added to the value of the exports for 1907, the total would be largely in excess of any previous record.

The only annual statistics of the dairy produce trade, which are available, are those which are obtained from outward entries at the customs ports, but estimates based on the figures of the decennial census of 1901 would go to show that the home consumption of butter and cheese is nearly equal in value to that which is exported. The following tables, prepared by the Commissioner of Census and Statistics, are interesting in this connection.

TABLE I.—PRODUCTION OF BUTTER AND CHEESE IN CANADA BY PROVINCES IN THE YEAR 1900 AS SHOWN BY THE CENSUS OF 1901.

Provinces.	Butter.			Cheese Factory made.
	Home made.	Factory made.	Total made.	
	Lbs.	Lbs.	Lbs.	Lbs.
Canada	105,343,076	36,066,739	141,409,815	220,833,269
British Columbia	1,092,555	395,808	1,488,363	.....
Manitoba	8,676,661	1,557,010	10,233,671	1,289,413
New Brunswick	7,842,533	287,814	8,130,347	1,892,686
Nova Scotia	9,060,742	334,211	9,394,953	568,147
Ontario	55,378,568	7,559,542	62,938,110	131,967,612
Prince Edward Island	1,398,112	562,220	1,960,332	4,457,519
Quebec	18,357,188	24,625,000	42,982,188	80,630,199
The Territories	3,536,717	745,134	4,281,851	27,693

TABLE II.—PRODUCTION OF BUTTER AND CHEESE IN CANADA, BY PROVINCES, IN THE YEAR 1900, AS SHOWN BY THE CENSUS OF 1901, AND THE EQUIVALENTS OF AGGREGATE PRODUCTIONS CONVERTED TO BUTTER AND CHEESE RESPECTIVELY, AT A RATE OF 1 POUND OF BUTTER EQUALS 2½ POUNDS OF CHEESE.

Provinces.	Butter made.	Cheese made.	Equivalent of Butter and Cheese to	
			Butter.	Cheese.
	Lbs.	Lbs.	Lbs.	Lbs.
Canada	141,409,815	220,833,269	229,743,123	574,357,807
British Columbia	1,488,363	.....	1,488,363	3,720,908
Manitoba	10,233,671	1,289,413	10,749,437	26,873,590
New Brunswick	8,130,347	1,892,686	8,887,421	22,218,554
Nova Scotia	9,394,953	568,147	9,622,211	24,055,530
Ontario	62,938,110	131,967,612	115,725,155	289,312,887
Prince Edward Island	1,960,332	4,457,519	3,743,340	9,358,349
Quebec	42,982,188	80,630,199	75,234,268	188,085,669
The Territories	4,281,851	27,693	4,292,928	10,732,320

NOTE.—The whole number of milch cows in the Dominion in 1901 was 2,408,677, and computed at an average yield of 3,000 pounds of milk per cow in the season the possible total production would be 280,000,000 pounds of butter, or 722,600,000 pounds of cheese.

It is probable that a demand for more frequent statistics of the dairy industry will be met by an effort on the part of the Census and Statistics Branch of the Department of Agriculture, to obtain annual or at least periodical returns during the interval between the decennial census years. The apparent impossibility of persuading the producers to supply the information required has made the collection of such statistics a matter of great difficulty in the past. It is to be hoped that an interest in the welfare of their industry will induce dairymen to co-operate in future attempts.

THE PROGRESS OF DAIRYING IN CANADA.

It must be admitted that the dairy industry has not shown the same rate of expansion in recent years that it did during its boom days. This statement does not imply that there is any lack of interest in it, or that it has ceased to be as attractive as it formerly was. The real reason is that the territory where dairying is likely to be successful in Ontario and Quebec—the two principal dairying provinces—is now pretty well occupied, and there is not the field for expansion that there was 10 years ago. With the exception of a few localities in the extreme southwestern part of Ontario, where an attempt was made to establish cheese factories some years ago, all the old districts are holding their own.

The buttermaking industry continues to grow in Northern Alberta, and there are signs of a revival of the creamery business in Manitoba and Saskatchewan. The crop conditions of 1907 were favourable to the development of mixed farming in those provinces.

IMPROVEMENT IN BUILDINGS.

It is gratifying to note that there is a tendency to provide more permanent and more sanitary factory buildings to replace the unsuitable and temporary structures which have in many cases done duty too long. Most of the new factories are being provided with cool curing rooms, and no factory is now considered to be quite up-to-date without this equipment. The 'Ruddick' system for cool curing room construction is being generally adopted.

One of the chief obstacles in the way of having more general improvement in factory buildings is the absurdly low rate for manufacturing which prevails. It cannot be urged too often that patrons are following a shortsighted policy in this respect. If the manufacturer, especially at proprietary factories, does not receive a fair remuneration for carrying out his part in the chain of production, he is bound to resort to cheapness, and that means poor service and loss to those who own the product.

CONDENSED MILK.

Several new condenseries have been started during the year, and this branch of the dairy industry is making some headway in Canada.

THE OFFICIAL REFEREE OF BUTTER AND CHEESE AT MONTREAL.

The position of Official Referee of Butter and Cheese at Montreal was vacant during the year 1906. To meet the requests of cheese boards and individual salesmen, it was decided to assign an officer to this work for the season of 1907. Mr. Geo. H. Barr, who joined the dairy staff in April last, was named as acting referee, and he fulfilled the duties of the position in a very acceptable manner.

In previous years it was the practice for the referee to make examinations, and give certificates, upon the request of the buyer only, if the salesman could not be reached immediately, so as to avoid delay and the risk of defects in the cheese or butter becoming more pronounced while waiting for the authority of the salesman. We still think that is the best way, because it is certainly in the interest of the owner of the cheese. The salesmen, however, pretty generally expressed themselves against that plan, insisting that they should be consulted before the referee is called in. As the salesmen undoubtedly have the right to be consulted, and to say whether their cheese or butter shall be examined by the referee or not, regulations were made to meet their views. The delay in making examinations was obviated in many cases by the salesmen giving the referee a standing order, in writing, to examine his cheese or

butter at any time on the sole request of a buyer. The following circular was issued in reference to this work, giving the rules and the standards on which the cheese are graded by the referee:—

DEPARTMENT OF AGRICULTURE, BRANCH OF THE DAIRY AND COLD STORAGE COMMISSIONER.

OFFICIAL REFEREE OF BUTTER AND CHEESE.

I am authorized by the Honourable the Minister of Agriculture to announce that an officer of the Dairy Division will be stationed at Montreal to act as Official Referee of Butter and Cheese after May 15th next, in compliance with the urgent requests received from dairymen in various districts.

In view of the representations which have been made by salesmen, the Referee will act only on request of both buyer and seller. While it is recognized that the delay which may ensue before the salesman can be communicated with, will result in any defect in the quality of the cheese or butter becoming more pronounced, and that it may interfere with the prompt exportation of the lot in question, the right of the seller to be consulted before any reference is made cannot be denied.

Any salesman who desires to avoid the risk of increased loss, consequent on the delay of final inspection, may do so by giving the Referee a standing order, in writing, authorizing the examination of his cheese or butter at any time on request of buyer alone. Such authorization must come direct from the salesman himself. Verbal notices will not be accepted. Any authorization of this kind may be cancelled by the salesman giving due notice to that effect.

In giving certificates on the quality of butter or cheese, the Referee will be guided by the classification and standards adopted two years ago. In this classification 'First Grade' is equivalent to 'Finest,' a term used for many years to denote first-class quality; and 'Under Finest' is divided into second and third grades, with clear definitions for each grade. The advantage to the seller of having the grades clearly defined and of having three grades instead of two must be obvious to all.

The following are the classifications and standards referred to:—

Standards for Grading Cheese.

First Grade—

Flavour.—Clean, sound and pure.

Body and Texture.—Close, firm and silky.

Colour.—Good and uniform.

Finish.—Fairly even in size, smoothly finished, sound and clean surfaces, straight and square.

Boxes.—Strong, clean, well made and nailed. Ends to be of seasoned timber. Close fitting. Weights stencilled or marked with rubber stamp.

Second Grade—

Flavour.—'Fruity,' not clean, 'turnipy,' or other objectionable flavour.

Body and Texture.—Weak, open, loose, 'acidy,' too soft, too dry.

Colour.—Unever, mottled, or objectionable shade.

Finish.—Very uneven in size, showing rough corners, black mould, dirty or cracked surfaces, soft rinds.

Boxes.—Too large in diameter; top edge of box more than ½ an inch below the top of the cheese. Made of light material. Ends made of improperly seasoned material.

Third Grade—

Flavour.—Rancid, badly 'off,' anything inferior to Second Grade.

Body and Texture.—Very weak, very open, showing pinholes or porous, very 'acidy,' very soft or very dry.

Colour.—Badly mottled, or very objectionable shade.

Finish.—Anything worse than second grade.

Boxes.—No question of boxes sufficient to make Third Grade if other qualities are good.

Explanations.

The definition for first grade cheese is practically the same as what was adopted several years ago for 'Finest' quality, except under the head of 'Boxes,' wherein there are some new and very necessary requirements.

The standard for first grade does not imply perfection. For instance, a 'clean, sound and pure' flavour means only an absence of bad flavour. A strictly fancy cheese must not only possess this negative quality, but must have a positive quality in a typical cheese flavour, which many first grade cheese never have.

It would be impossible to define exactly the qualities or defects which may appear in cheese. The standards given are intended to indicate the range of quality for the different grades rather than to establish hard and fast rules to guide the grader.

The expression 'good colour' means that the colour must be of a proper shade. There are cheap, inferior cheese colours used, which do not give the proper shade no matter what quantity is used.

The expression 'clean surfaces' in the definition for First Grade does not exclude from that grade cheese with a slight growth of blue mould, although it is desirable that the cheese should not show any signs of mould. 'Black mould,' (see definition for Second Grade), is simply the advanced stage of the ordinary blue mould.

The following scale of points will indicate the relative values of the different divisions of quality: Flavour, 40; body and texture, 30; colour, 15; finish and boxing, 15; = 100.

It is obvious that a defect in flavour of a certain degree counts nearly three times as much in determining the grade as a defect in finish or boxing of the same degree.

Cheese which are strictly sour, or otherwise inferior to Third Grade, will be designated as 'culls,' for which there is no classification.

Any lot of cheese shall be considered third grade if it shows three or more defects of Second Grade class.

If there are not more than 15 per cent of defective cheese in any lot, the inferior ones may be sorted out and classed separately. If more than 15 per cent are defective, the classification for the defective cheese may apply to the whole lot.

This does not apply when inferior cheese have been properly marked so as to be identified, in which case the inferior cheese shall be treated as a separate lot.

Standards for Grading Creamery Butter.

First Grade—

Flavour.—Sound, sweet and clean.

Body and Grain.—Waxy; not too much moisture.

Colour.—Even, no streaks or mottles, not too high.
Salting.—Not too heavy if salted butter. Salt all dissolved.
Finish.—Good quality parchment paper lining, neatly arranged. Package well filled; bright, even surface.
Packages.—Well made, of good material, and clean. Boxes to be of right size to hold 56 lbs. of butter when properly filled. Paraffined on inside. Neatly branded. Tubs to be lined with parchment paper of good quality.

Second Grade—
Flavour.—Not quite clean, or other objectionable flavour.
Body and Grain.—Salvy; overworked; too much moisture.
Colour.—Slightly mottled or streaky; too high, or objectionable shade.
Salting.—Too heavy; salt undissolved, or unevenly distributed.
Finish.—Very light or poor quality parchment paper lining; lining not arranged to protect butter; mould on parchment paper. Rough uneven surface. Package not properly filled.
Packages.—Rough, badly made, or of poor or unseasoned material, including sapwood. Dirty packages. Uneven weights.

Third Grade—
Flavour.—Very stale; very strong stable flavour, or anything inferior to Second Grade.
Body and Grain.—Very salvy; 'mushy;' mould in butter.
Colour.—Very mottled or otherwise inferior to Second Grade in regard to colour.
Salting.—No question of salt alone sufficient to make Third Grade if other qualities are up to First Grade.
Finish.—No parchment lining. Very rough finish. Dirty surface.
Packages.—Inferior to Second Grade.

Explanations.

It is difficult to explain exactly the qualities or defects which may appear in butter. The standards which have been adopted are intended to indicate the range of quality for the different grades, rather than to establish hard and fast rules for the guidance of the grader.

'Fresh,' or saltless butter will be judged on the same standards as for salted butter, by leaving the matter of salting out of the consideration.

A package is not considered well filled if the butter is more than half an inch below the top of the package.

It is very important that all boxes should hold only 56 lbs. No other weight should be marked thereon. Tubs should be of uniform size and weight.

The following scale of points will indicate the relative values of the different divisions of quality: Flavour, 40; Body or Grain, 25; Colour, 10; Salting, 10; Finish and Packing, 15; = 100. It is obvious that a defect in flavour of a certain degree counts nearly three times as much in determining the grade as a defect in finish or packing of the same degree; and so on.

The expression 'too much moisture' applies to all butter which contains over the legal limit of 16 per cent of water, or to any butter that according to the custom of the trade would be described as containing too much water. (From many tests made finest Canadian butter does not contain, or should not contain, on the average, over 13 per cent of water.) The Official Referee will not be expected to determine the actual percentage of water.

'Too heavy salt' means more salt than is generally demanded by the trade for salted butter.

'Too high colour' means over-coloured, or too much colouring material used. 'Objectionable shades' or unnatural colours are those which result from the use of inferior or unsuitable colouring material.

J. A. Ruddick,
Dairy and Cold Storage Commissioner.

Ottawa, Ont., April 20, 1907.

Mr. Barr has submitted the following report on his work as Acting Referee for 1907.

Mr. J. A. Ruddick,
Dairy and Cold Storage Commissioner,
Ottawa.

Sir,—I have the honour to submit my report as Acting Official Referee for Butter and Cheese at Montreal for the season of 1907. I began my duties on May 16 and finished on November 26.

LOTS OF CHEESE EXAMINED BY MONTHS AND WITH GRADES GIVEN.

Month.	1st Grade.		2nd Grade.		3rd Grade.		Culls.		Total All Grades.	
	Lots.	Boxes.	Lots.	Boxes.	Lots.	Boxes.	Lots.	Boxes.	Lots.	Boxes.
May	.....	.....	4	107	.....	.....	.....	.....	4	107
June	1	40	35	1,846	7	316	.....	.....	43	2,202
July	3	92	92	4,902	21	1,238	.....	.....	116	6,232
August	1	28	54	2,591	8	317	2	13	65	2,949
September	.....	.....	28	1,088	2	77	.....	.....	30	1,165
October	.....	.....	14	840	3	74	.....	.....	17	914
November	1	72	12	379	.....	.....	.....	.....	13	451
	6	232	239	11,753	41	2,022	2	13	288	14,020

Of the cheese examined 2 per cent are placed 1st grade; 83 per cent are placed 2nd grade, and 14 per cent are placed 3rd grade. The chief defects in the cheese may be classed as follows:—

Defects in Flavour.				Defects in Texture.			Defects in Colour.	Other Defects.
Not Clean.	Fruity.	Rancid.	"Off."	Loose and Open.	Acidy or Mealy.	Too soft or weak.	Uneven or too Pale.	Poor finish Mould Stains.
p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
73	6½	6	3.8	60	33	29	22½	15

It will be seen that 'Not clean in flavour' is the chief defect, and it is due, no doubt, largely to taints in the milk. Yet quite frequently the flavours appeared to be caused by the use of bad starters and impure water at the factories. There were very few cases where defect in flavour could be described as 'feed' flavours. In the spring a numbr of lots had a 'leeky' flavour, caused, no doubt, by the cows eating leeks.

'Loose and open texture,' which is the next greatest defect, appeared to be caused by leaving too much moisture in the curds, either by insufficient cooking or not

stirring the curds sufficiently when the whey is removed, and by salting the curds too soon.

'Acidy' or 'mealy' texture is a very common defect and is usually due to too much acidity in either the milk or curd, and to the use of too much salt on the curd.

'Soft or weak body' is a defect very common in the extreme eastern part of Ontario and some districts in Quebec. Insufficient cooking of the curd, and leaving an excessive amount of moisture in the curd after the whey is removed, not only gives a soft or weak body, but often injures the colour as well.

Quite frequently the colour was mottled by mixing in old curd, especially about the time the cows were going out on the grass.

BOXES AND BOXING.

There is still room for improvement in the cheese boxes. They are made too light, and even after being coopered, many shipments present anything but an attractive appearance as they are being loaded on to the steamships. Improvement can also be made in putting on the factory brands and weights of the cheese. The factory brand should be put on the lap close to the edge, and the weight figures stencilled on just beside the lap of the box.

SMALL FACTORIES SHOW LARGEST PERCENTAGE OF POOR CHEESE.

The following figures will give a fairly good idea as to the size of the factories which are turning out inferior cheese. In most cases the number of boxes in each lot represents a week's make of cheese: 6·5 per cent of the lots examined contained over 100 boxes; 93·7 per cent of the lots examined contained under 100 boxes; 83·3 per cent of the lots examined contained under 70 boxes, and 43·7 per cent of the lots examined contained under 40 boxes.

Bearing in mind that about 98 per cent of the total lots examined were second and third grade, it will readily be seen that the great majority of our inferior cheese come from small factories. It does not necessarily follow that fine cheese cannot be made in small factories, but it is true that the best men cannot be secured to operate them. It requires men with decidedly greater ability to manage a large business than to manage a small one, and just as long as we have small and poorly equipped factories, just so long will there be weak or inferior cheesemakers in them, and one of the solutions for doing away with a great many of our second and third grade cheese, is larger factories and strong capable men to operate them.

LOTS OF BUTTER EXAMINED EACH MONTH.

Month.	1st Grade.		2nd Grade.		3rd Grade		Total all Grades.	
	Lots.	Boxes.	Lots.	Boxes.	Lots.	Boxes.	Lots.	Boxes.
May	.....	.....	2	47	1	27	3	74
June	.....	.....	5	911	.....	.....	5	911
July	.....	.....	9	1,237	3	115	12	1,352
August	1	230	8	877	.....	.....	9	1,107
September	.....	.....	2	82	1	42	3	124
October	.....	.....	2	43	.....	.....	2	43
November	.....	.....	6	144	.....	.....	6	144
	1	230	34	3,341	5	184	40	3,755

The defects in the butter may be classed as follows:—

	Per cent.
Not clean in flavour	95
Too dry and crumbly	12½
Too soft in body	7½
Colour mottled	40
Uneven salting	15
Badly finished	15

Two lots mouldy.

Some flavours are difficult to describe otherwise than 'not clean,' but in the majority of cases the flavours were what is known as 'old or sour cream' flavours. As all the butter I examined came from Quebec province, it is evident that those interested in the creamery industry will have to look carefully after the milk and cream that are being delivered to the creameries. One large creamery had considerable trouble with the flavour of their butter during the early part of the season. The trouble was removed by discarding their cream vats, which were made of tinned copper. The tinning had become worn off and apparently the cream became tainted by standing in them over night.

During the month of November, some of the butter was entirely too dry and crumbly, a decidedly bad defect, and one which could be easily avoided by proper ripening and churning temperatures.

Creamery men would do well to remember that the past season has been an exceptional one in the butter trade on account of the strong local demand, which made it possible for dealers to pass many lots of butter that would not have passed inspection for export purposes.

The regulations requiring a written order from the salesmen, before cheese or butter would be inspected, had no doubt a tendency to lessen the number of calls upon the referee.

During the season I received standing orders from 51 salesmen to examine 77 different brands of cheese and butter when found fault with by the buyers, and specific orders from 59 salesmen to examine 111 different lots that had been rejected by the buyers.

The only serious objection that can be raised to this regulation which has been insisted on by the salesmen, is that defective cheese are usually growing worse, and occasionally a shipment will remain in the warehouse for a week or more after being rejected, before the referee receives authority from the salesman to examine it. The cheese sometimes are left in rooms where the temperature is so high that the quality is injured. I am pleased to say that this does not often occur, as nearly all the merchants put the rejected lots into cool rooms with the rest of the cheese. Butter is always placed in cold storage.

I consider the methods of handling and the facilities for storing cheese and butter in Montreal are such that the quality is well preserved. Some of the export firms have facilities which are not surpassed in the world and immense amounts of money are being spent each year in equipping the warehouses with modern cold storage.

It should be the duty of the salesmen of cheese and butter to acquaint themselves with the conditions which exist in the different warehouses in regard to facilities for handling their products, in a safe and reliable manner, upon arrival in Montreal.

I am of the opinion that the conditions under which butter and cheese are inspected in the warehouses in Montreal are not in the best interests of the trade, nor are they as fair to either the buyer or the seller as they should be.

IDENTIFICATION MARKS ON PACKAGES.

It is important that all inspections or examinations of butter and cheese, after sale, should determine, as nearly as possible, the actual quality of the whole lot in

question. If the shipment contains one 'batch' of cheese, or churning of butter, of inferior quality, it is very unwise on the part of the salesman to allow the chance of the whole lot being reduced in grade by the inclusion of part, or all, of the inferior packages among those on which the average quality is arrived at. It would never do to use the trier on every package of butter and cheese. The injury thus caused would be serious. There is more or less injury, loss and disfigurement whenever the trier is applied. The general practice for determining the quality of each lot of butter or cheese at Montreal is to select a certain number of packages at random, and the quality of the whole lot is judged from the result of this examination. It is frequently unfair to the factory or creamery and sometimes it is unfair to the buyer.

If the packages were marked so as to distinguish the cheese from every 'batch' or vat, or the butter from every churning, it would then be possible to select one package from each vat or churning, and when these were examined, an absolutely correct indication of the quality of the whole lot would be obtained without unnecessary injury by use of the trier.

It often happens that the cheese from one vat, or the butter from one churning, is very inferior in quality while the rest of the shipment is quite up to the standard. When the inspection is made and the package representing this lot is found, the others bearing the same mark can then be set aside and the reduction in price figured on the actual quantity of inferior butter or cheese, instead of being averaged over the whole lot.

The following instances will suffice to illustrate the point:—

On May 31 I was asked by a salesman of a creamery to examine a lot of butter, which had been rejected by the buyer on account of flavour. The salesman picked five boxes out of the lot and I found two of these with a strong, leeky flavour. I said to the salesman, 'There may be only one churning with that flavour, but we cannot test every box in a lot of 31 boxes.' He found out from the maker afterwards that there was only one churning with this flavour. The buyer cut the price ½ cent per pound on the whole lot, which amounted to $8.68. If each churning had been marked and the cut had been 1 cent per pound on the inferior boxes, it would only have amounted to $2.80.

The reverse happened with a shipment of cheese later in the season. A lot of some 50 boxes had been rejected. I found each batch numbered, a fact which the buyer was not aware of, as he had not been advised to that effect. I asked to see a box of each number, and found only the cheese bearing one number defective, which made a cut on five cheese instead of on fifty.

During the latter part of the season, after your circular on the subject was sent out, I found quite a number of cheese factories and creameries in Quebec marking each batch of cheese and churning of butter, and in more than one case they saved money by doing so.

The educational advantages of such a plan are very important. The maker, in numbering his different batches or churnings, should keep a corresponding record, with notes on the conditions and circumstances attending the manufacture of each lot. If, for instance, the cheese bearing a certain number are reported to be 'acidy,' the cheesemaker's record will give him an idea as to how this defect originated. If a certain churning of butter is said to be 'mottled' or over salted, such notes would indicate how to avoid such errors in future.

GEO. H. BARR,
Acting Official Referee of Butter and Cheese.

MONTREAL, December 31, 1907.

IMPORTANCE OF IDENTIFICATION MARKS ON CHEESE AND BUTTER PACKAGES.

Mr. Barr has touched on a very important point in referring to the advisability of having each 'batch' of cheese or churning of butter so marked as to be easily identified when the inspection is made. The cheese should be marked as they come from the press. If the cheese are inspected in the factories it is not important whether the boxes are marked or not, but if inspection is to be made at the car door or at Montreal, the packages also must be marked. Butter, of course, can only be marked on the package. This practice has been common in western Ontario for years, and the makers there would not think of neglecting it.

The marking of the packages may be done by giving each batch of cheese or churning of butter a number, to run consecutively for each shipment, which usually covers a period of one week. Thus Monday's cheese would be marked 1, 2, 3 and so on according to the number of vats. If there are three vats in use, Tuesday's cheese would be marked 4, 5 and 6, and thus to the end of the week. Another plan would be to use both numbers and letters, the numbers to represent the vats and the letters the day of the week put on like this: $\frac{1}{A}$ $\frac{2}{A}$ and so on.

THE ADVANTAGE OF THREE GRADES WITH DEFINITE STANDARDS.

The writer has frequently urged that all sales of butter and cheese should be made on the basis of three grades, according to the standards and definitions already given on page 6. The advantage of this improvement from the standpoint of the factory is that the salesman would have fuller information concerning the degree of defect in his cheese or butter, if it was rejected on account of quality, and would then be in a stronger position to effect a fair settlement. The complaint is often heard, and we believe it is sometimes justified, that two lots of cheese or butter with the same defect are 'cut' very different amounts. This sort of thing is possible when the description is that the goods in question are simply 'under finest,' which may mean anything. With three grades established as suggested, and as used by the official referee, there would come to be recognized in a very short time a fairly definite relation in value between first and second grades. It has been argued by some salesmen and makers that the standard for first grade cheese is too high and that it cannot be reached by the average factory. Probably the best answer to that assertion is the fact that the great bulk of Canadian cheese *does* reach this standard, and would pass it anywhere. The definition of flavour for first grade simply implies that the cheese must be free from any defect in flavour. Surely no one will say that if there is anything wrong with the flavour of a cheese it can be placed in first grade or called 'finest.' Such a cheese never was and never will be anything better than second grade, or 'under finest.' The words 'clean, sound and pure' do not call for perfection in flavour by any means. The perfect flavour is rich, 'nutty' or 'cheesy,' and a large percentage of cheese which are simply 'clean, sound and pure' never have those qualities.

These two measures, the marking of the cheese and butter so that it may be accurately inspected, and the adoption of three grades instead of two ('finest' and 'under finest') as at present, mean more in the writer's judgment, to the factories, than the particular point at which the cheese or butter should be inspected.

SANITATION IN THE DAIRY.

The world wide movement looking to better conditions surrounding the production of milk and its manufacture into butter and cheese has not missed this country.

Higher standards are being set to guide those engaged in this line of work, and stricter attention to matters of sanitation and hygiene is being insisted on. In Ontario, recent legislation, and its enforcement by the provincial dairy staff, are having a wholesome effect in improving the conditions in and around cheese factories and creameries. This in itself is bound to exert a good influence on the producers of milk, even if no further pressure were being brought to bear on them.

The milk supply of towns and cities is attracting the most attention, and considerable activity is being shown on the part of municipal authorities who have to deal with this important question. The opposition of producers to all reasonable suggestions and regulations for the improvement of market milk is as futile as it is foolish and shortsighted. If the doubt and distrust in the minds of consumers, to say nothing of positive knowledge of the unsatisfactory conditions surrounding the production of much of the milk supply, were removed by an evidence of a desire on the dairymen's part to meet the demands of modern standards, the consumption of milk would increase enormously at higher prices than those which now prevail. There are many practical proofs that this contention is correct, in the success which has attended the efforts of the wide awake milk producers to supply a high class article.

One of the difficulties in securing a reform of methods in milk production lies in the fact that the term 'cleanliness,' which is so strongly and so properly urged in this connection, is only a relative one, that conveys very different shades of meaning to different persons. Everything depends on the individual standards, which are fixed very largely by environment and custom. A practice, or a condition, which fails to offend the senses of a man who has always been accustomed to it, may be repulsive and absolutely unbearable to another. Specific rules for dealing with these questions, as far as they can be devised, are necessary to secure desirable results.

PRESERVATIVES IN MILK.

The use of preservatives in market milk should receive more attention than it does, for not only may the substance used be harmful, but its use is evidence that the milk is being produced or handled under conditions which cause it to sour quickly, or that it is being kept beyond a reasonable limit of time before being consumed.

The supervision of the milk supply should be carried beyond the point where it leaves the purveyor's hands and passes into those of boarding house, restaurant and hotel keepers. Why should those who buy their milk as an item in a bill-of-fare not be protected as well as those more fortunate people who consume it in their own homes?

THE DAIRYING INDUSTRY.

(By J. A. Ruddick.)

The following lecture, delivered before the May Court Club of Ottawa, was intended to interest those who are not familiar with the dairy situation in Canada, and to give them some idea of the importance and possibilities of the industry.

> While I am pleased to have been given an opportunity of assisting in a small way in the splendid work which the May Court Club is doing in this city, I can assure you that I realize fully the difficulty of dealing with the subject on which I have been asked to speak, in such a manner as to make it interesting to an audience composed largely of young ladies.
>
> One would need to have a more fertile imagination than I have, to be able to put much poetry into a description of the dairy industry. It is, however, not only one of the greatest industries in Canada from a material point of view, but it is one of the great industries of the world. The dairy

industry supplies all civilized people with at least two of their most indispensable articles of food. There may not be many people induced to engage in the business of dairying from a pure love of it, but it cannot be denied that it does offer attractions to those who are obliged to consider the money getting possibilities of whatever line of effort their energies are employed in.

There are not many persons in this audience, or in the whole Dominion, for that matter, who do not derive, either directly or indirectly, some benefit from this great industry which has contributed so largely to the prosperity of Canadian agriculture. This assertion will be the more readily believed when I state that the total value of the products of Canadian dairies, including milk, butter, cheese and condensed milk, amounts to something like $100,000,000 annually.

A very important point in this connection is the fact that while we recover, with the aid of the gentle cow, this large amount of wealth from mother earth, by the transmutation of pasturage and fodder crops into milk, the soil is not impoverished in the process, but on the contrary, is left in better condition every year to produce another $100,000,000. If you dig a million dollars out of a gold mine, you have nothing left but a hole in the ground, and I am told that you are much surer of the hole in the ground than you are of the million dollars. In a country like ours where agriculture is the true basis of all wealth, this question of the conservation of soil fertility is of fundamental importance.

In view of these facts, I have no further apology to offer on behalf of the dairy industry.

A VARIED INDUSTRY.

A broad application of the term 'dairying industries,' would include milk production, the milk supply of towns and cities, the manufacture of butter, cheese and condensed milk and the numerous by-products obtained from the casein of milk, such as substitutes for ivory and celluloid, adhesives, woodfillers, paint, pencil erasers, toilet cream, &c., &c. But knowing the short time at my disposal, and believing that the patience and endurance of the members of the May Court Club and their friends must have limitations, I am obliged to use the term in a more restricted sense this evening. I shall confine myself, therefore, to a brief reference to the two great branches of the industry, namely, the manufacture of butter and the manufacture of cheese, with particular reference to the butter and cheese which are made in factories. It has been the common practice to base all estimates of our progress on the factory end of the business, because the home end of dairying is such an unknown quantity that accurate figures are not obtainable, although it is estimated that the milk which is used for direct consumption, and the butter which is made on farms have a value which is at least double the value of the butter and cheese made in factories.

ANCIENT ORIGIN.

The use of milk and its products as food for man dates back to the very earliest times. We find frequent mention of butter and cheese in the early books of the Bible. Cheese was known to the Greeks before the time of Homer, and Cæsar relates that the German tribes supplied the Romans with cheese in his day.

Tradition says that butter was discovered by the nomadic tribes of the east, who found that it was produced by the agitation which milk received when transported long distances on the backs of camels. It is said that in

Arabia, even to this day, a sort of oily butter is procured by placing the milk in a vessel made from the skin of an animal, and shaking it to and fro suspended from the limb of a tree or other convenient support.

COMPOSITION OF BUTTER AND CHEESE.

Butter, as we know it, consists of the fat of milk, in solid form, mixed with a certain percentage of water, which may vary according to the skill or intention of the buttermaker, but 12 to 14 per cent is considered to be about the right proportion. Sixteen per cent of water is the legal limit in this country. The process of buttermaking is practically the same wherever scientific methods are followed, and it requires an expert to detect the slight differences of flavour and texture which may be found in well made samples of butter brought together from the ends of the earth. Of course, there is good and bad butter to be found everywhere, and it is the proportion of the two kinds produced in any country that makes or mars its reputation in this respect, rather than any distinctive quality or characteristic in the product which may be traced to locality of origin.

Cheese is made by precipitating the protein compounds of milk with rennet. The curd which is thus formed holds the fat of milk mechanically, and a certain amount of the water is also retained. A Canadian Cheddar cheese, for instance, consists, roughly spaking, of one-third fat, one-third protein or casein compounds, and one-third water.

The art of cheesemaking is infinitely more intricate and difficult than that of buttermaking. It deals with several constituents of the milk, two of which, the sugar and the casein, unlike the comparatively inert and stable fat, are peculiarly subject to bio-chemical changes, as yet not fully understood or studied by the chemist and the bacteriologist.

It requires only slight modifications of the process of cheesemaking to produce marked differences in the finished product. As a result, there are probably 100 distinct, different varieties of cheese made in various parts of the world, and at least 25 well known classes, varying greatly in appearance, texture and flavour—particularly in flavour.

They vary in texture from the Schabzieger of the Swiss Alps, so hard that it must be grated, or rasped, as the name suggests, to the soft and creamy French cheeses, like Brie or Camembert; in the matter of flavour, there is the mild and genteel Cheddar on the one hand, and the loud and vigorous Limburger on the other; and as for size, they range from the dainty Neufchatel, a few ounces in weight, to the ponderous Gruyère, which may weigh over 100 lbs.

THE SCIENCE OF DAIRYING.

While the preparation of cheese as an article of food is undoubtedly one of the oldest of the technical arts, the science of cheesemaking is of very recent origin. Until only twenty or thirty years ago, our knowledge of the art was almost wholly empirical, having been handed down from father to son, or more correctly speaking, from mother to daughter, each generation adding its quota of experience to the rules which then did duty for the more exact knowledge that is available to the cheesemaker of the present day.

The brilliant researches and discoveries of Pasteur, although they did not include a study of milk, nevertheless blazed the track along which other scientists have followed to show us the why and the wherefore of many of the changes that take place in milk and its products. We know now that the profound changes which result from milk fermentations are not natural to

Creamery at Sabrevois, Que.

Creamery at Terrebonne, Que.

A Prince Edward County (Ont.) Cheese Factory.

the milk itself, but depend upon the entrance of germs which are introduced either accidentally or intentionally after the milk is drawn. Thus that common phenomenon, the souring of the milk, is not due to any inherent tendency in the milk itself, but to the introduction of the *lactic acid bacilli* which split up the sugar of milk and produce lactic acid. The investigations of bacteriologists and chemists, supported by the work of practical experimenters, have established during these recent years what appears to be a sound basis for the science of dairying.

It is only fair to say here that the sum of original knowledge on this subject has received some valuable contributions through the investigations of the experts of the Canadian Departments of Agriculture and the agricultural colleges. It may also be said that Canadian cheesemakers have led the van in applying the teachings of science to the practice of their art.

But we must not pursue this phase of the subject any further, or we shall get into technicalities which would neither be profitable nor interesting to this audience. It will be more in keeping with the aims and objects of the Court in arranging the course of lectures, of which the present is one, if we now proceed to consider the origin, status and possibilities of the dairy industry in Canada.

DAIRYING IN CANADA.

The early French settlers introduced cows from Brittany, and no doubt made butter from their milk. It is quite likely that they made cheese also, and that the 'Fromage raffiné' still made on the Island of Orleans is a relic of their early efforts. Cheese of a more or less nondescript character was made for home use by the early settlers of Ontario, but neither the art nor the industry made any progress in Canada until the factory system was introduced in the year 1864. The first cheese factory was established in Oxford county, Ontario, by one Harvey Farrington, who came from New York state for that purpose. Another factory was started in Hastings county in 1866, and from that time forward the extension of the industry forged rapidly ahead in Ontario. The first cheese factory was established in the province of Quebec, in Missisquoi county, about the same time as the first ones in Ontario, but there was very little development of the industry until after the year 1880.

The dairy industry has not grown as much in New Brunswick or in Nova Scotia as one would expect to find in districts so well adapted for it. Fruit growing, lumbering and fishing have divided the attention of the farmers to some extent, and dairying does not prosper unless it is made the special business of the farm. There are, however, a number of successful cheese factories and creameries in these two provinces, and they supply the local demand for butter and cheese and have a considerable surplus for export to the West Indies. I was gratified to find, when I visited Bermuda and Jamaica a year or two ago, that the 'Bluenose' and the 'Evangeline' brands of butter and cheese were the most popular of any sold in those islands.

Co-operative or factory dairying was begun in Prince Edward Island in 1892 under the guidance of my predecessor in office, Dr. James W. Robertson. In a few years there were some 40 factories in operation and Prince Edward Island became recognized as a successful dairying province. It has been generally acknowledged that the prosperity of the island has been wonderfully quickened by this adoption of systematic dairy practices.

Following the trend of events rather than a geographical sequence, let us now turn our attention to the West for a few moments. In Manitoba, organized dairying began to make headway about 1894, and there are now a

fair number of cheese factories and creameries in that province. In what was then the territories of Assiniboia and Saskatchewan, there were at one time 14 creameries in active operation, but the reign of King Wheat has proved inimical to the growth of the dairy industry and it has not been developed extensively in what is now the province of Saskatchewan.

Proceeding westward into Alberta, we find more favourable conditions, especially in that section of the province lying between Calgary and Edmonton, where the progress of the dairy industry has kept pace with the settlement of the country. Beginning in 1896, the increase has been steady and substantial, with the result that to-day there are 45 creameries and 8 cheese factories in the sunny province of Alberta. There is every indication that Northern Alberta will become one of the best dairy sections of Canada.

These two western provinces have been the scene of a unique and rather abrupt departure from the line which has generally been followed by governments in assisting agricultural effort. A few creameries had been started in the early nineties as private or co-operative ventures, but at the end of two or three years, they were, for various reasons, and without exception, acknowledged to be failures. The new settlers, who were depending almost wholly on dairying as a means of livelihood, were in a serious position, because, while it was possible for them to make butter on their farms, their facilities were very poor, and there was no way by which the individual farmer could find a profitable market for his butter at that time.

The Dominion Government came to the rescue, and the Dairy Commissioner was authorized by the Honourable the Minister of Agriculture to take over the management of the existing creameries, to advance sufficient money to pay off their pressing debts, and to make loans for the equipment of new creameries that would come under the same management. Confidence was at once restored and under expert supervision the business grew and prospered so that the Department of Agriculture was able, at the end of 1905, to give up the active control of a large number of creameries which had been assisted to a position of independence and stability. New markets had been found for the butter in the Orient and in the Yukon, and a reputation had been established that is of great value to the industry in that part of the country to-day. The money which was advanced to the creamery associations has all been repaid except a few trifling amounts.

The new provincial governments are following the policy adopted by the Federal authorities, and with a modified plan, continue to foster the industry. Knowing the circumstances, as I do, I have no hesitation in asserting that this action on the part of the government, call it paternalism if you like, saved what was then known as 'the Territories' from a most serious setback, and carried the early settlers over the most critical and trying period of their experience.

Crossing the Great Divide into British Columbia, we find a successful creamery business established at different points in the fertile Okanagan Valley, along the Lower Fraser river and on Vancouver island.

Thus we see that the dairy industry is well established in every province of the Dominion from the Atlantic to the Pacific. The total number of cheese factories and creameries in Canada at present is 4,355. Of this number, 1,284 are in the province of Ontario, and 2,806 are in Quebec, leaving 265 fairly evenly distributed among the other seven provinces. The factories in Ontario average much larger than those in the other provinces.

THE EXPORTS OF CHEESE AND BUTTER.

The first cheese was exported from Canada to Great Britain in 1864 or 1865. (See page 21.) The shipments grew year by year and reached the

maximum in 1903, when the total value of the butter and cheese exported amounted to the sum of $31,667,561.

The slight falling off in the quantity exported during the last year or two has been attributed to a decline of the industry, but the true reasons for it are much more satisfactory and are really a cause for congratulation. The large growth in our population and the increased purchasing power of the people generally, easily account for the decrease in the exports.

STILL ROOM FOR EXPANSION.

There is no reason why the dairy industry should not be largely extended in every province of the Dominion. I have visited every important dairy country in the world, except Siberia, and am bound to say none of them is better fitted by nature for successful dairying than Canada is. With a climate which produces healthy, vigorous animals, notably free from epizootic diseases, with a fertile soil for the growing of fodder crops and pasture, with abundance of pure water, and a plentiful supply of ice for all purposes of the dairy, we have almost ideal conditions, and advantages which should be of great assistance in holding a fair share of the world's trade in dairy products.

Great Britain is our chief market for butter and cheese, although we send comparatively small quantities to Newfoundland, Bermuda, the West Indies, British Guiana, Mexico and South Africa. We also sell some butter in the Orient and of late years a small quantity has gone to Germany.

The quantity of butter and cheese annually imported into Great Britain is enormous. The value of the butter alone amounts to over $100,000,000, of which the little kingdom of Denmark supplies nearly one-half. Siberia comes next and is credited with over $15,000,000 worth, closely followed by Australia. Next in the order of their importance are France, New Zealand, Sweden, the Netherlands, Canada, the United States and Argentina. Small and irregular quantities are received from some other countries. It will probably surprise many of you to hear that the dairymen of Iceland send occasional shipments of creamery butter to Scotland.

The value of the cheese annually imported into Great Britain is a little over $33,000,000, of which Canada has the distinction of furnishing 72 per cent of the whole, or 84 per cent of the kind which we make. The other countries from which supplies of cheese are obtained are New Zealand, the Netherlands, United States, France, Switzerland, Italy and Australia. These facts are important, especially in regard to butter, because they show us what a great field there is for a further extension of our butter trade. Canadian butter stands high in the British market, not only for its superior quality, but because our laws relating to its manufacture and sale are the most stringent of any country in the world, and are a standing guarantee of its absolute purity. I need hardly say that Canadian cheese easily ranks first in quality among the imports into Great Britain of the class to which it belongs.

FOOD VALUE OF MILK AND CHEESE.

The comparative food values of milk and cheese are becoming better known, and as this appreciation grows, as it should, these products will enter more largely into our daily dietary than they do at present. A quart of good milk is said to be equal in food value to a pound of meat, and one pound of well ripened cheese contains as much nourishment as two and a half pounds of the best beefsteak; therefore, milk at 12 cents a quart and cheese at 20

cents a pound are among the cheapest of foods, compared with the present prices of other things.

GOVERNMENT AID.

The governments of Canada, both federal and provincial, have been liberal in their policies concerning the dairy industry. It has been generally agreed that the provincial authorities should undertake all work which is educational in character, while the Dominion government deals with questions pertaining to markets, transportation and cold storage, or what may be termed the commercial side of the industry. The Dominion government also assumes the responsibility for the enactment and the administration of the laws relating to the manufacture, sale and exportation of dairy products.

All the provincial departments of agriculture, except Nova Scotia, have regularly organized dairy divisions. Dairy schools are maintained in Ontario, Quebec, New Brunswick and Manitoba. Experts are employed who visit the cheese factories and creameries during the working season, for the purpose of giving instruction to the cheese or butter makers and to advise with those in charge of factories on questions of general management. Canada was the first country in the world to adopt this system of factory instruction, and there are now nearly 100 of these experts employed by the different provincial governments. Much of our success in cheesemaking can be attributed to this system of factory instruction.

The Dominion officials endeavour to keep in touch with the tendencies and requirements of the markets to which our butter and cheese are shipped, and to disseminate among the cheese and butter makers such information as may be acquired with that end in view.

A large staff of men are employed under the Dairy and Cold Storage Commissioner, who watch and report on the handling of butter and cheese from the time it leaves the factory in Canada until it reaches the consumer in Great Britain. The information thus collected is passed on to those who may be interested, or who are responsible for the defects which have been noted, and as a result there is constant improvement being made, not only in the quality of the butter and cheese and in the appearance and style of the packages, but also in the services provided by the transportation companies. The cold storage services, both on land and sea, which were inaugurated through the initiative of the Department of Agriculture, at the head of which is the Hon. Sydney Fisher, who is our chairman this evening, have been of incalculable benefit to the dairying industries.

SOME STATISTICS OF DAIRYING.

TABLE III.—TOTAL NUMBER OF CHEESE FACTORIES, CREAMERIES AND COMBINED FACTORIES IN CANADA IN 1907, BY PROVINCES.

Provinces.	Cheese Factories.	Combined Cheese and Butter Factories.	Creameries.	Skimming Stations.	Total.
Ontario	1,096	86	102	.....	1,284
Quebec	1,392	736	627	51	2,806
Prince Edward Island	23	16	8	.....	47
Nova Scotia	7	.....	10	.....	17
New Brunswick	33	.....	35	.....	68
Manitoba	36	.....	21	.....	57
Saskatchewan	1	.....	6	.....	7
Alberta	8	.....	45	.....	53
British Columbia	.....	.....	16	.....	16
	2,596	838	870	51	4,355

TABLE IV.—TOTAL EXPORTS OF CHEESE AND BUTTER IN FISCAL YEARS 1880 TO 1908 INCLUSIVE.

Butter.			Cheese.		
Year.	Quantity.	Value.	Year.	Quantity.	Value.
Years ending June 30.	Lbs.	$	*Years ending June* 30.	Lbs.	$
1880	18,535,362	3,058,069	1880	40,368,678	3,893,366
1890	1,951,585	340,131	1890	94,260,187	9,372,212
1891	3,768,101	602,175	1891	106,202,140	9,508,800
1892	5,736,696	1,056,058	1892	118,270,052	11,652,412
1893	7,036,013	1,296,814	1893	133,946,365	13,407,470
1894	5,534,621	1,095,588	1894	154,977,480	15,488,191
1895	3,650,258	697,476	1895	146,004,650	14,253,002
1896	5,889,241	1,052,089	1896	164,689,123	13,956,571
1897	11,453,351	2,089,173	1897	164,220,699	14,676,239
1898	11,253,787	2,046,686	1898	196,703,323	17,572,763
1899	20,139,195	3,700,873	1899	189,827,839	16,776,765
1900	25,259,737	5,122,156	1900	185,984,430	19,856,324
1901	16,335,528	3,295,663	1901	195,926,397	20,696,951
1902	27,855,978	5,660,541	1902	200,946,401	19,686,281
1903	34,128,944	6,954,618	1903	229,099,925	24,712,943
1904	24,568,001	4,724,155	1904	233,980,716	24,184,566
1905	31,764,303	5,930,379	1905	215,733,259	20,300,500
1906	34,031,525	7,075,539	1906	215,834,543	24,433,169
Years ending March 31.			*Years ending March* 31.		
1907 (9 months)	18,078,508	4,011,609	1907 (9 months)	178,141,567	22,006,584
1908	4,786,954	1,068,703	1908	189,710,463	22,887,237

TABLE V.—DETAILED STATEMENT OF EXPORTS OF CHEESE IN FISCAL YEARS 1902 TO 19 (INCLUSIVE. (Years ending June 30, 1902 to 1906, and years ending March 31, 1907 and 1908.

To	1902.	1903.	1904.	1905.	1906.	1907. (9 months.)	1908.
	$	$	$	$	$	$	$
Great Britain	19,620,239	24,620,004	24,099,004	20,174,211	24,300,968	21,909,879	22,763,736
Australia	6,862	6,913	6,247	5,411	5,350	245	525
British Africa	868	2,514	7,559	10,612	16,623	18,261	16,362
B. W. Indies	18,542	44,674	34,253	36,176	25,509	13,666	27,533
B. E. Indies	60	40	315	62	20	.....	.....
British Guiana	1,833	2,165	1,193	2,571	3,860	3,143	6,228
Other British Possessions	746	553	216	.....	.....	.....	9
Hong Kong	.....	161	1,253	1,079	1,029	.....	851
New Zealand	216	983	1,039	1,642	1,795	1,690	1,362
Newfoundland	20,100	21,334	21,754	35,171	30,992	37,748	35,792
Belgium	.....	.....	10	22	287	.....	2,080
Argentina	.....	14	.....	.....	.....	.....	.....
Cuba	350	331	211	102	811	.....	57
China	1,409	1,734	1,899	2,013	2,195	2,206	1,572
Danish West Indies	332	2,037	1,936	2,046	2,056	1,568	1,985
France	.....	.....	44	700	7,203	.....	10
Japan	821	1,076	1,609	759	775	1,071	1,444
Philippine Islands	.....	289	100	.....	.....	.....	.....
St. Pierre	158	120	356	341	875	318	190
United States	12,038	7,779	5,386	14,182	16,082	6,900	17,732
Dutch West Indies	538	.....	.....	.....	.....	.....	.....
Norway and Sweden	.....	.....	.....	104	994	.....	.....
Germany	1,179	170	.....	364	.....	54	3
Bermuda	.....	.....	.....	12,505	14,033	9,080	9,245
Dutch Guiana	.....	15	23	18	13	9	.....
Egypt	.....	30	.....	.....	.....	.....	.....
Mexico	.....	.....	159	329	1,594	630	168
French West Indies	.....	7	.....	.....	.....	.....	.....
Central America	.....	.....	.....	80	.....	.....	347
Holland	.....	.....	.....	.....	97	116	.....
U. S. of Columbia	.....	.....	.....	.....	68	.....	.....
Other countries	.....	.....	.....	.....	.....	.....	6
Totals	19,686,291	24,712,943	24,184,566	20,300,500	24,433,169	22,006,584	22,887,237

TABLE VI.—DETAILED STATEMENT OF EXPORTS OF BUTTER IN FISCAL YEARS 1902 TO 1908 INCLUSIVE. (Years ending June 30, 1902 to 1906; years ending March 31, 1907 and 1908.)

To	1902.	1903.	1904.	1905.	1906.	1907. (9 months).	1908.
	$	$	$	$	$	$	$
Great Britain	5,459,300	6,554,014	4,400,774	5,568,999	6,802,003	3,805,925	823,761
British West Indies	71,816	112,968	127,790	80,323	87,085	59,313	85,371
British Guiana	6,796	7,565	6,412	8,929	11,654	8,113	12,861
Other British Possessions	284	72					5
Hong Kong							
Newfoundland	47,066	69,017	88,422	82,387	48,283	56,516	34,931
China	78	141	1,763	562	761	5,041	1,319
Cuba	243	202	796	658	285	1,034	720
Danish West Indies	1,581	6,077	5,858	4,473	4,560	3,664	4,939
French West Indies		1,020					
Germany	101	13	25,644				
Hawaii		115					
Hayti		38					
Japan	1,013	1,816	6,027	6,496	9,373	9,062	4,258
St. Pierre	27,102	28,655	26,598	21,827	17,668	17,615	18,749
United States	41,149	10,225	6,497	70,580	33,965	3,539	38,899
British Africa	12	133,958	16,417	4,914	2,056	265	
Mexico		4,685			1,268	484	265
Brazil	1,608	9,084					
Dutch West Indies	2,040						
U. S. Columbia	92	1,175	2,272	200	1,747	2,145	
Australia	260	6,187					
Bermuda				50,482	47,045	33,900	33,177
France			14	14,440	4,155		
San Domingo		1,351					
Holland			8,175	13,680			
Venezuela		6,240					
Belgium			10	116			
Central America			686	1,062	3,431	4,932	9,448
Corea				15			
Dutch Guiana				186	30	40	
Turkey				50		21	
Porto Rico					170		
Totals	5,660,541	6,954,618	4,724,155	5,930,379	7,075,539	4,011,609	1,068,703

TABLE VII.—QUANTITIES OF CHEESE IMPORTED INTO THE UNITED KINGDOM, BY COUNTRIES, FOR YEARS ENDING DECEMBER 31.

From	1901.	1902.	1903.	1904.	1905.	1906.	1907.
	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
Holland	315,925	284,020	302,503	233,601	214,033	229,341	241,551
Belgium	74,071	70,372	87,998	63,694	64,389	76,021	72,133
France	26,833	36,801	36,004	44,268	48,884	43,244	47,036
Italy	714	732	726	642	727	544	645
United States	540,102	390,479	360,916	224,830	175,256	233,445	114,300
Other foreign countries	2,144	2,323	1,720	1,014	2,000	4,146	1,901
Australia	149						
New Zealand	79,094	51,875	56,339	84,947	78,626	126,216	192,301
Canada	1,547,739	1,709,565	1,848,142	1,900,556	1,858,767	1,925,835	1,698,847
Other British Possessions	68	45	10	745		2	3,519
Totals	2,586,837	2,546,212	2,694,358	2,554,297	2,442,682	2,638,794	2,372,233

TABLE VIII.—QUANTITIES OF BUTTER IMPORTED INTO THE UNITED KINGDOM, BY COUNTRIES FOR YEARS ENDING DECEMBER 31.

From	1901.	1902.	1903.	1904.	1905.	1906.	1907.
	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
Russia	378,452	490,091	484,328	404,717	461,140	606,549	657,649
Sweden	180,212	191,591	212,232	206,791	188,209	182,803	226,740
Norway	26,341	26,266	23,197	28,532	31,773	29,302	23,465
Denmark	1,597,186	1,703,032	1,771,654	1,708,619	1,630,363	1,675,761	1,818,811
Iceland and Greenland	264	589	1,107	2,632	3,022	2,319	2,804
Germany	26,983	26,375	12,507	4,080	5,372	10,701	7,297
Holland	298,912	393,261	343,761	252,262	209,897	195,366	168,496
Belgium	77,526	80,636	76,510	65,191	53,252	42,239	22,120
France	311,601	414,240	454,088	371,061	348,442	319,401	231,306
United States	150,126	54,458	42,405	68,754	84,874	157,312	1,063
Argentine Republic	22,787	69,336	80,491	82,568	77,013	48,737	51,122
Other Foreign Countries	515	23	586	.....	300	188	242
British East Indies	882	863	1,329	1,417	1,425	1,848	1,439
Australia	248,168	80,397	121,165	480,778	459,333	561,114	598,986
New Zealand	167,343	157,993	249,879	294,982	300,418	311,672	313,863
Canada	215,588	285,765	185,437	268,607	292,117	190,968	34,753
Other British Possessions	4	17	18	14	916	978	.....
Totals	3,702,890	3,974,933	4,060,694	4,241,005	4,147,866	4,337,258	4,210,156

DAIRY LEGISLATION.

The dishonest and fraudulent practice of 'stuffing' cheese, or in other words, disposing of inferior or worthless curd or cheese when the curd is being put to press, is apparently somewhat on the increase, as more cases have been reported during the last few years than previously. This is believed to be the result of undue publicity given to a case two or three years ago. It is said that any person guilty of this act could be prosecuted for fraud, but the difficulties in the way of having prosecutions made on that basis would seem to make special legislation desirable to deal with this question, in order to protect the reputation of the Canadian cheese trade from unscrupulous and dishonest persons.

The silly and reprehensible practice of putting bottles or boxes containing notes, &c., in the centre of cheese, must also be stopped. Very serious complaints have been made by receivers in Great Britain who find these bottles broken and liable to cause serious injury to persons eating the cheese. It is a disgusting thing to find any foreign substance in the centre of the cheese in any case. It is, therefore, proposed to amend the Inspection and Sale Act (Revised Statutes of Canada, 1906) by the addition of the following section:—

238a. No person shall

(*a*) incorporate in a new cheese, during the process of its manufacture, any inferior curd or cheese; or

(*b*) knowingly sell, expose, or have in his possession for sale without giving due notice thereof, any cheese in which has been incorporated during the process of its manufacture any inferior curd or cheese; or

(*c*) place in a cheese during the process of its manufacture, or at any time thereafter any foreign substance of any kind.

Section 279 of the said Act is amended as follows:—

(*g*) 'Foreign substance' means any substance not necessary to the manufacture of the cheese into which it is introduced.

The penalty for violations of the foregoing sections are not more than five hundred dollars, not less than twenty-five dollars for each offence.*

* These proposed amendments became law on July 20, 1908.

THE FIRST CHEESE EXPORTED.

Mr. A. A. Ayer, the well known cheese exporter of Montreal, writing in reference to the statement published over the signature of Adam Brown, Esq., of Hamilton, Ontario, at page 9 of our report for 1907, rather takes exception to Mr. Brown's claim to have been the first exporter of Canadian cheese to England in 1866. Mr. Ayer says: 'The late Mr. Heath, of the firm of Heath & Finnimore, London, Ontario, was living in Waterloo, Quebec, for some time before and after 1864-65. He bought and shipped to England, the first product of the Dunham factory, including the make up to August 1, 1865. The Dunham factory was started in 1864. I am positive about the shipments to England from May 1, 1865, but not so positive about any shipments having been made in 1864.

'I personally bought about 1,100 cheese from the Dunham factory, being the make of August, September and October, 1865. Only a small portion of this, however, was shipped to England, the balance being required for the local trade in Montreal and Quebec. From that date forward there was a gradual increase in the shipments of Canadian cheese to England, and the writer has been actively connected with the trade from the time that the first factory cheese were made in Canada.'

We are pleased to give space to Mr. Ayer's remarks, and to record these historical facts concerning the beginning of the Canadian export trade in dairy products before they are forgotten.

THE COW TESTING ASSOCIATIONS.

INTRODUCTION.

The principal active dairy work carried on during the year by this branch, was that which has for its object the improvement of dairy herds, and is a continuation of the work of the cow testing associations, which was dealt with in the report for the year ending March 31, 1907. The records of each month's tests have been widely published in press bulletins issued regularly, and it is not intended in this report to give the records with as much detail as was done last year.

It is a very gratifying result of this campaign to find that many more dairymen have become interested in the matter of keeping records of individual cows, and have taken it up on their own account. We continue to supply blank forms for recording the weight of milk to all who apply for them.

We have endeavoured from the first to secure the co-operation of the owners and managers of the cheese factories and creameries, and at the time of writing the indications are that nearly all the testing will in future be done by some person connected with a factory. An announcement has been made to the effect that competent persons will be paid for this work at the rate of five cents per test, the department to furnish the blank forms and the chemicals used in making the tests.

The owners of the herds must supply their own outfits and deliver the samples at the appointed time and place of testing. The record of the weight of milk and the percentage of fat is sent to this office, where all calculations are made; a copy of the monthly report is returned to the owner of the herd along with the record of all the other herds, designated by number only, belonging to the same association. At the end of the year a complete report is sent to each member, giving him full particulars of the record of the individual cows in his herd. Mr. C. F. Whitley of the dairy staff, who has become well known to the dairymen of Canada, through his connection with this work, and to whom I am indebted for careful and intelligent supervision of it, has worked out the instructive comparisons and compiled the interesting tables which will be found in the following pages.

GENERAL.

In 1907 there were 56 cow testing associations in operation in the Dominion, comprising 26 in Quebec, 24 in Ontario, 1 in Prince Edward Island, 2 in Nova Scotia, and 3 in British Columbia. This was a marked increase over the work of 1906, when there were only 16 associations. The members increased from 297 to 876, and the number of cows entered to be recorded, from 3,750 to 9,160. Better than the mere growth numerically was the enhanced interest taken by the members in the work. The weighing of the milk was more regular, the samples seem to have been more carefully taken and were sent in more promptly for testing; while the work, generally speaking, was continued longer, so that more records for longer periods are available than last year. Further than this, there was a greater disposition evinced on the part of the members to meet the officials from the department who were doing the testing, so as to ask questions on all manner of subjects pertaining to dairying. This is an indication of what could easily be accomplished with most beneficial results, namely, the making of the cheese factory or creamery a real centre of dairy education. One of two associations also, at the suggestion of the department, arranged for an occasional meeting of the members, just among themselves, to discuss the records and take steps for the improvement of their herds. This feature is one of great promise. One great advantage of records of dairy cows is the opportunity afforded for comparisons. Enquiry naturally is made regarding 3 distinct points of difference:—(1) between yields in various districts or counties, (2) between yields of herds in the same associations, but most important of all, (3) between individual cows in the same herd under the same management. This brings into most prominent thought the ultimate aim of the work undertaken by members of all cow testing associations, namely, a real study of each individual cow in the herd, with the object of developing strains of animals producing abundant quantities of milk economically.

Taking the districts question first, one or two noteworthy contrasts may be mentioned. Others will be noticed in the tabulated statements which follow.

In July 133 cows at North Oxford, Ont., gave 123,800 lb. milk, 4,128 lb. fat; but 143 cows at Woodburn, Ont., gave only 107,010 lb. milk, 3,444·1 lb. fat. That is, 10 more cows at Woodburn gave 16,790 lb. milk, 684·3 lb. fat less.

In August 142 cows at Ste. Emelie, Que., gave 70,245 lb. milk, 2,962·7 lb. fat; but 136 cows at St. Prosper, Que., gave 104,490 lb. milk, 4,263·5 lb. fat. That is 6 more cows at Ste. Emelie gave 30,245 lb. milk, 1,300·8 lb. fat less.

The September yields in various associations afford some interesting and striking comparisons: Cowansville, Que., 111 cows, 48,795 lb. milk, 2,139·1 lb. fat. St. Marc, Que., 114 cows, 60,045 lb. milk, 2,675·0 lb. fat. St. Prosper, Que., 113 cows, 78,455 lb. milk, 3,304·8 lb. fat. From practically the same number of cows the owners at St. Prosper obtained 27,660 lb. milk and 1,165·7 lb. fat more than did the owners at Cowansville.

In October 54 cows in the Star, Ont., association gave 19,330 lb. milk, 751·9 lb. fat. During the same time 106 cows in the East and West Oxford association gave 65,830 lb. milk, 2,347 lb. fat; this is a better yield by 70 per cent.

The total production of 54 cows in one association in Victoria county during October was 19,330 lb. milk, containing 751·9 lb. butter fat. During the same period 106 cows in Oxford county gave 65,830 lb. milk, 2,347 lb. fat, or again a better yield by 70 per cent. Many men in the former association are looking for the dual purpose cow; probably all members of the latter association aim at special purpose cows. In the former district some farmers leave the whole care of the cows to the women of the household, purely as a 'side line,' and if they can make anything out of the cows besides keeping the house in milk, cream and butter, they are satisfied. Some keep a scrub bull running with the herd, and have no idea when the cows should freshen. The latter is a real, whole-hearted, progressive, money making dairy district. Taking other records from the same two counties, it is found that in the six months, May to

October, 1907, the total production per cow stood at 4,793 lb. milk and 165 lb. fat in the one case, and 2,724 lb. milk, 99 lb. fat in the other. This is a difference of 76 per cent. One moment's thought will indicate the tremendous possibilities for Victoria county if its 19,000 cows were 76 per cent higher in their returns than they are at present. Why should they not be?

Another contrast in 30-day yields is found in two Quebec associations, where 65 cows at Cowansville in November gave a total of 1,321·4 lb. fat, but 60 cows at St. Jerome gave only 566·3, considerably less than half.

Similar differences might be instanced for every month in many districts. Enough have been quoted to weight the argument for better cows. The difference in herd averages, though comparatively small, aggregates a tremendous total. The extra profits could easily be made.

There is possibly a difference in the adaptability of the districts to dairying, but there is certainly a more pronounced difference between the individuality of the owners of the herds. A real affection for the dairy cow means better care of her, and consequently better returns financially. Care means cash.

The differences between herds in the same district and the same association illustrate, possibly better than the above, the aptness and efficiency of one man's methods over another's in the application of intelligent, up-to-date business methods to the science and practice of dairying. In this industry to-day there is no room for shiftless, haphazard, hit or miss methods; the dairy herd has to be run as a commercial undertaking. Over and over again can be found instances of ten cows producing just as much milk as twenty. Such contrasts are in herds in associations in Ontario, Quebec and British Columbia, indicating that there is room for little short of a perfect revolution in dairy management in many localities. Let the records speak to the question for a moment. Nine cows in one herd at St. Marc, Que., gave a total yield of 265 lb. fat, while in another herd in the same association 18 cows gave only 260 lb. during September. All of them calved in April. Again, 10 cows in one herd gave 9,550 lb. milk, while 16 in another gave only 7,000 lb.

Another instance, at Cowichan, B.C., in July, 209 cows averaged 631 lb. milk, 3·7 test, 24·0 lb. fat. But one herd averaged 1,067 lb. milk, 4·3 test, 46·4 lb. fat; while another averaged only 417 lb. milk, 3·9 test, 16·5 lb. fat, or only a fraction over one-third as much butter fat.

One lot of cows in the hands of a careful dairyman, during 5 months, averaged 4,194 lb. milk each, but another lot yielded only 2,727 lb. each. If the earning capacity of the latter had been equal to that of the former, they would have given 16,130 lb. of milk *more* than they did.

Sprinkled all through the detailed records of each association as given below are to be found scores of similar examples of the striking differences in the average production of herds in the same district, whether for short or long periods.

The third point of contrast is that between cows in the same herd. This individuality of animals is so strongly marked that only by careful observation on the part of the owner can be determined the most profitable cows for selection as the foundation stock of the herd. The very fact that in any breed there are so many departures from the characteristics and particular type that may be expected—the difference in the animals' ability to use feed, their variation in yield of milk and fat under similar conditions, their persistency in milking or their tendency to dry off quickly—emphasizes the importance of continuous watchfulness and intelligent action, wherever a herd is kept. Such action must follow a study of each cow's record.

To illustrate some of these points, one does not usually expect to find a high fat content in Holstein milk. Here and there have been noticed some individuals of this breed that averaged over 4·0 per cent fat for the season. Are there many more to be discovered? Why should we rest content with so many cows testing only 2·5, 2·2 and even 2·0 per cent? Is it equitable to other patrons at the cheese factory to let

the burden of making up the milk to a fair standard of quality as regards fat rest on their better cows?

There is certainly virtue in inherited tendencies; the transmission of dairy quality is possible. Judicious selection aims at this. Heavy milking ancestry is a very live factor in the capabilities of animals of the present generation. A twelve-year-old grade that calved in October, 1906, gave in the 8 months, January to October, 1907, over 8,360 lb. milk testing 3·8 every month. She has had no special treatment, but comes of good milking stock. Selection pays.

It has been stated that if the shrinkage per month in milk yield for the first six months is not over 10 per cent of the previous month, it is not abnormal. Very few indeed, of the animals recorded here show as little as that. A few run from 13 to 16 per cent, but a very great many have a shrinkage of 20, 30 and even 35 per cent, even in the first four months of milking. There is certainly room for improvement at this point. In one herd there were noticed cows calving in spring that gave only 500 lb. milk in September, but others calving at the same time were still giving in September 900, 1,000 and 1,100 lb. These are the animals to select and breed from.

The tendency in far too many cases seems to be to have the cows milk just for the cheese making season only. Ten months is not too long.

The evident preference of the cow for methodical habits has been vigorously commented on by some of our members. Her objection to a change of milkers is very apparent. The establishment of a perfect sympathy and mutual understanding between the cow and the milker, and not only that, but regularity as to the hour of milking is insisted on most strongly by our best men, who find that careful attention to these details pays, and pays well.

The herds with the poorest records were almost always found to be those with the greatest mixture of grades and the largest number of cross-breds.

In some localities, those not quite alive to the enormous possibilities of high class dairying, farmers were to be found taking this attitude, 'I don't care whether the cow pays with milk or not, as long as she raises a good steer calf'; and again, 'Where can I replace a cow if she does not pay?' The obvious rejoinder was that it is a man's duty to see that each cow in the herd does pay; any dairy farmer with a good head on his shoulders ought so to direct and control the forces surrounding him that his whole herd is made profitable. The 'grading up' of a herd by selection of the best cows at present on the farm, by the use of pure bred sires of good dairy descent, has frequently been advocated, but there still seems need of its constant reiteration. Hundreds of dairymen in the Dominion have turned run down farms and poor herds into highly productive lands and excellent herds by the use of brains.

A large number of last year's members discontinued because they are not farming any longer. This also explains the brevity of many tests in some localities.

One argument in favour of more frequent weighings than the six times per month as at present, is the statement of several members that on the three days appointed for weighing, their cows invariably seemed to fall off in milk for some reason or other; hence some cows, they think, gave more milk than would appear in the records. The advisability of daily weighing has always been recommended and strongly advised by representatives of this branch at meetings of members

It seems necessary to repeat that one main object of this work is to increase the milk production through a systematic study of each individual cow in the herd. Even after all that has been said and written on this subject it is found that many men still rest content to-day with the presumption that the total herd production of milk is 'fairly good,' and the average test is 'pretty fair.' This is altogether too vague. Until there is determination to check up the performance of each animal definitely, some of these 'loafers' that give an unprofitable weight of milk and a poor test are almost certain to be retained, to the detriment of the owner and the herd standard.

Taking eight months, April to November, 46 per cent of all the cows recorded

were 100 lb. milk below the average every month. The average in May for all the cows tested in Ontario associations was 764 lb. milk, and 46 cows out of every 100 gave only 653 lb. Similarly in August the average yield was 638 lb., and 46 per cent gave only 529 lb.

Taking the total number of milch cows in Ontario as 1,100,000, and then assuming that 46 per cent of them could easily give 100 lb. of milk more than they do at present, with milk at 90 cents per 100 lb. the dairymen of this province could easily have an extra income of three and a half million dollars. Note that this is simply by improving those below the average, which should not be difficult, and does not consider the immense possibilities involved in further improving the average and the good cows.

INTANCES OF THE VALUE OF TESTING.

One member relates the incident of a neighbour purchasing a cow for $100, but being dissatisfied with her, he resold her, gaining $5 on his bargain. She fell into the hands of a man using the scales and Babcock test, who as soon as he could show a few months' records disposed of her for $500.

Another cow, 8 years old, was bought for $32 from a man who evidently did not realize her value; for her milk brought in $140 from the factory in one year.

A buyer who picked up four cows out of one stable remarked to the owner he could not give much for one particular animal. Nevertheless that same cow as a 3-year-old gave 10,326 lb. milk, testing 3·7. Before recording her production the cow was valued at $35, but $100 is refused now.

One member who had set his standard for each cow at 7,000 lb. milk per year, has now decided to make it 10,000 lb. per cow, and is quickly working up to that.

Another member offered a heifer for sale at $25 when she first came in; he says now that he would not sell her at all, as she is proving herself by the test to be one of his best cows.

As one result of this record work some members have already set about improving the herds of the district by purchasing animals whose value is supported by records of milk and butter fat production.

Many members owning cows that until tested had been booked for the butcher, admitted that the weighing and testing had proved such animals to be the best in the herd; this testing has thus been of inestimable value in opening men's eyes to facts.

Following a good example set at one association where the proprietor of the creamery offered cash prizes at the fall fair for the cows with the best association records, the suggestion is made that directors of other fairs might do likewise.

COW TESTING ASSOCIATIONS.—AVERAGE MONTHLY YIELDS, 1907.

	Total Number of Cows.	Average Yield.		
		Lbs. Milk.	Test.	Lbs. Fat.
January—				
Ontario	80	479	3·6	17·6
Quebec	239	310	4·6	14·3
General average	319	353	4·3	15·1
February—				
Ontario	41	579	3·4	20·0
Quebec	163	415	4·3	18·0
General average	204	448	4·1	18·4
March—				
Ontario	123	741	3·5	26·3
Quebec	194	480	4·1	20·0
General average	317	582	3·8	22·4

	Total Number of Cows.	Average Yield.		
		Lbs. Milk.	Test.	Lbs. Fat.
April—				
Ontario	1,076	671	3·3	22·4
Quebec	762	494	3·7	18·2
General average	1,838	597	3·4	20·6
May—				
Ontario	1,663	764	3·3	25·4
Quebec	1,963	574	3·7	21·2
Prince Edward Island	34	587	3·4	20·1
General average	3,660	661	3·5	23·1
June—				
Ontario	2,886	851	3·3	28·5
British Columbia	865	745	3·7	27·7
Quebec	3,194	693	3·8	26·4
Nova Scotia	99	526	4·4	23·6
Prince Edward Island	97	630	3·3	21·3
General average	7,141	760	3·5	27·3
July—				
Ontario	2,859	762	3·3	25·5
Quebec	2,935	656	3·8	25·2
British Columbia	815	636	3·7	24·0
Prince Edward Island	124	669	3·4	22·9
Nova Scotia	82	499	4·3	21·6
General average	6,815	696	3·6	25·1
August—				
British Columbia	765	653	3·9	25·0
Quebec	2,847	563	3·9	22·4
Ontario	2,633	638	3·4	22·0
Prince Edward Island	147	570	3·5	20·3
Nova Scotia	47	437	4·7	20·3
General average	6,439	601	3·8	22·4
September—				
British Columbia	422	630	4·0	25.3
Quebec	2,346	486	4·2	20·8
Ontario	2,543	542	3·7	20·0
Prince Edward Island	134	524	3·7	19·5
General average	5,445	524	3·9	20·8
October—				
British Columbia	626	545	4·4	24·0
Nova Scotia	37	450	4·1	18·7
Ontario	2,124	471	3·8	18·3
Quebec	1,807	388	4·4	17·3
Prince Edward Island	123	422	3·8	16·1
General average	4,717	448	4·1	18·6
November—				
British Columbia	516	486	4·4	21·1
Ontario	1,155	423	3·8	16·3
Prince Edward Island	95	332	4·1	13·9
Quebec	967	298	4·6	13·8
General average	2,733	388	4·2	16·3
December—				
British Columbia	420	528	4·4	23·4
Ontario	540	438	3·7	16·6
Quebec	418	281	4·5	12·6
Prince Edward Island	78	271	3·9	10·5
General average	1,456	410	4·1	17·1

PERCENTAGE OF FAT.

In 1906 the number of cows tested each month in Ontario and Quebec varied from 36 in January to 2,869 in July, with a total number of tests during the twelve months of 17,135, giving a total yield of 9,420,860 pounds of milk and 363,990·9 pounds of fat, which means an average test of 3·86 per cent of fat.

In 1907 the number of cows tested each month in the Dominion varied from 204 in February to 7,140 in June, with a total number of tests during the twelve months of 41,257, giving a total yield of 24,673,000 pounds of milk and 923,944·9 pounds of fat, which means an average test of 3·74 per cent of fat.

AVERAGE PER CENT OF FAT, 1907.

	Total Number of Cows Tested.	Total Milk.	Total Fat.	Average Test.
Ontario	17,723	11,573,913	402,962·1	3·48
Quebec	17,835	9,735,103	387,171·4	3·97
Canada	41,257	24,673,000	923,944·9	3·74

The following table shows the average percentage of fat in milk from the number of cows indicated, by months, for the calendar year of 1907, in Ontario and Quebec.

AVERAGE PERCENTAGE OF FAT, 1907.

Month.	Ontario.		Quebec.		Total.	
	Number of Cows.	Average Test.	Number of Cows.	Average Test.	Number of Cows.	Average Test.
January	80	3·6	239	4·6	319	4·3
February	41	3·4	163	4·3	204	4·1
March	123	3·5	194	4·1	317	3·8
April	1,076	3·3	762	3·7	1,838	3·4
May	1,663	3·3	1,963	3·7	3,625	3·6
June	2,866	3·3	3,194	3·8	6,060	3·5
July	2,859	3·3	2,935	3·8	5,794	3·5
August	2,633	3·4	2,847	3·9	5,480	3·7
September	2,543	3·7	2,346	4·2	4,889	3·9
October	2,124	3·8	1,807	4·4	3,931	4·1
November	1,155	3·8	967	4·6	2,122	4·1
December	540	3·7	418	4·5	958	4·1

FEED.

So many members have been inquiring about the question of feed, evidently with the thought in mind that feed is expensive, that the experience of one man may well be quoted for general encouragement. He has one pure-bred cow with a certified record of 13,158 lb. milk, and 485 lb. fat in 365 days. His estimate of the cost of feed is $70. But his actual cash receipts, from milk sent to a cheese factory part of the year and to a condensery for the balance, amounted to $170. In other words, for every dollar invested in feed, the cow returned two dollars and forty-two cents worth of milk. As a large money-making investment a cow of this individuality is surely an excellent type. Where else could such interest be guaranteed? This farmer is milking over 40 cows, and expects each one to produce over 8,000 pounds of milk. The evident moral is that it pays, and pays abundantly well, to select cows of good individual

capacity, whether grades or pure-breds, and to feed judiciously. Why should any man rest content with giving thirty dollars worth of feed to a cow that will only return thirty dollars worth of milk?

Through the courtesy of Mr. J. H. Grisdale of the Experimental Farm, Ottawa, a circular issued by him, relative to the growing of soiling crops, was mailed to each member. Our officials who were doing the testing report that by many farmers the suggestions were ignored, much to their regret later in the season. Others, fortunately, were quick to take good advice and were well repaid.

Those who were feeding soiling crops state that even if in some cases there was no substantial increase in the yield, they have succeeded in keeping up the flow in spite of the unfavourable weather (late spring, practically no summer, and rainy fall), and considered that they were well repaid for the extra work. Had it not been for the extra care and extra feed given to the cows in addition to the pasture, they state, the cows would in September and October have given practically nothing.

In the Shearer, Ont., association, one member fed chop all summer, chiefly oats and pease. His 7 cows gave in July, August, September and October 2,943 lb. milk, 101·8 lb. fat each. A neighbour stated that this was the first for many seasons that he gave no extra feed, and said that he was ashamed of his weights. During the same four months his 16 cows gave only 2,230 lb. milk, 78·7 lb. fat. If they had produced as well as the first herd these 16 cows would have given an extra 11,408 lb. milk. At 90 cents per 100 lb., this means $102.60 lost, in four months.

The members at St. Prosper, Que., who were feeding soiling crops averaged 913 lb. milk and 29·3 lb. fat more per cow in 6 months than the other members who were not feeding soiling crops.

At St. Marc, Que., one herd of 8 cows in August gave an average of 706 lb. milk, 3·8 test, 26·8 lb. fat. In September they averaged 792 lb. milk, 3·7 test, 29·5 lb. fat. While other men were wondering at the shrinkage of their cows, this particular farmer, thanks to his provision of green feed at the suggestion of this department, was rejoicing in an extra 688 lb. milk and 21·6 lb. of fat over his August receipts.

A contrast between two herds in two Quebec associations is given below in tabulated form for the purpose of emphasizing two points: first, the advantage of liberal feeding; second, the advantage of selecting cows according to each cow's ability to produce paying quantities of milk and butter fat.

The owner of herd A feeds liberally, giving grain every day in the year, and providing green soiling crops. Further, he has, through the use of scales and the Babcock test, systematically practiced selection for nine years. Has it paid him?

Though the feed cost $15 per cow more than it cost per cow in herd B, the profit on more feed with the better cows was over five times as much.

COMPARISON OF TWO GRADE JERSEY HERDS, QUEBEC, 1907.

Herd.	Number of Cows.	Total Yield of Milk.	Fat.	Cost of Feed per Cow.
		Lbs.		$ cts.
A	20	131,900	4·8	50 00
B	22	75,427	4·7	35 00

Herd.	Cost of 100 Pounds Milk.	Profit per 100 Pounds Milk.	Profit on the Total Yield.
	$ cts.	$ cts.	$ cts.
A	0 75	0 44	582 99
B	1 02	0 15	113 14

COMPARISON OF NET PROFIT FROM A GOOD AND AN AVERAGE COW.

Looking into the records of two cows in a Quebec association, it is found that a good cow produced 7,900 lb. skim milk and 350 lb. fat; or a total value of product of $99.55. Another cow in the same herd gave 3,700 lb. skim milk and 205 lb. fat, or a total value of product of $56.85. Presuming that feed cost $30, the net value stands for No. 1 cow at $69.55, and for No. 2 cow, at $26.85. But are there not other expenses besides cost of feed? Some provision must be made for such items as interest on the value of the cow, her depreciation, cost of caring for her, interest and taxes on buildings. Her share of cost of maintenance of a first-class dairy sire may be offset by the value of the calf, and manure should be credited. In some dairy sections in the state of Ohio these expenses have been averaged at $21 per cow. Applying these figures to the two animals here considered, the deduction from the total value of product will now be $51. Hence it is seen that No. 1 cow gave $48.55 net profit, and No. 2 cow gave a net profit of only $5.85. Therefore, the one cow gave 8⅓ times as much net profit as the other. In other words, to obtain $1,000 net profit, one would need to keep only 20 cows like No. 1, but actually 171 cows like No. 2. Which is the preferable kind? Yet in such extraordinary proportions are cows being kept to-day. Should not such contrasts sound the bugle call to action on every dairy farm?

ASSOCIATIONS IN ONTARIO, PRINCE EDWARD ISLAND AND BRITISH COLUMBIA.

AVERAGE YIELD OF 438 COWS TESTED FOR SIX MONTHS, 1907, IN ONTARIO.

Name of Association.	Number of Cows.	Average. Milk.	Average Test.	Average Fat.
		Lbs.		Lbs.
Kinmount	9	2,539	3·6	89·4
Lorneville	16	2,916	3·5	102·6
Oak Leaf	6	3,006	3·5	107·5
Pine Grove	31	3,120	3·4	107·4
Spring Creek	20	3,369	3·5	119·7
Milton	17	3,184	3·8	120·0
Warsaw	70	3,521	3·4	121·1
Beaverton	24	3,364	3·6	122·6
Sheffield	30	3,350	3·7	124·4
North Oxford	16	3,717	3·5	129·1
Shearer	20	3,990	3·3	131·0
Central Smith	11	4,056	3·3	132·5
Woodburn	34	3,914	3·4	133·2
Keene	21	4,052	3·3	137·2
Brockville	21	4,184	3·3	140·0
East and West Oxford	26	4,322	3·5	151·3
Culloden	38	4,323	3·6	154·3
Rockford	28	5,206	3·3	171·4

Average yield of all the 438 cows, 3,757 lb. milk, 3·5 test, 130·3 lb. fat.

These records for the periods of 6, 7 and 8 months would have to be increased slightly to arrive at the actual total production for the full period of lactation. A careful estimate of Ontario records indicates that an additional 12 per cent of milk and fat for the 6 months, 7 per cent for the 7 months, and 5 per cent for the 8 months records would be a liberal weight to add.

Hence, adding 12 per cent to the above 6 months average, the actual production for these 438 cows for their full milking period may be taken as 4,207 lb. milk, 145·9 lb. fat.

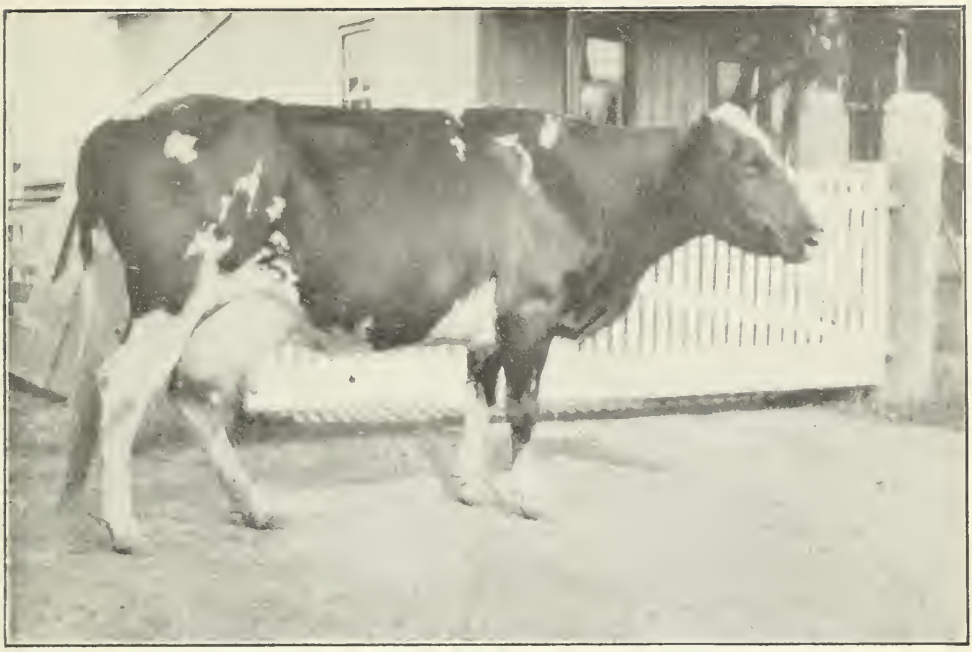


FIG. 1.—Grade Shorthorn Cow in Pine Grove Association, seven years old; eleven months' record 9,072 lbs. milk, 5·2 test, 472.9 lbs. fat.

FIG. 2.—Grade Holstein Cow in Central Smith Association, eight years old; ten months' record 13,370 lbs. milk, 3·0 test, 399·6 lbs. fat.

SESSIONAL PAPER No. 15a

AVERAGE YIELD OF 195 COWS TESTED FOR SIX MONTHS, 1907, IN PRINCE EDWARD ISLAND AND BRITISH COLUMBIA.

Name of Association.	Number of Cows.	Average Milk.	Average Test.	Average Fat.
		Lbs.		Lbs.
New Glasgow, P.E.I.	47	3,102	3·8	117·9
Cowichan, B.C.	48	3,191	4·2	132·8
Chilliwack, B.C.	33	3,630	3·8	139·0
Eden Bank, B.C.	67	3,751	4·1	153·0

Average yield of the above 195 cows, 3,436 lb. milk, 4·1 test, 137·7 lb. fat.

AVERAGE YIELD OF 609 COWS TESTED FOR SEVEN MONTHS, 1907, IN ONTARIO.

Name of Association.	Number of Cows.	Average Milk.	Average Test.	Average Fat.
		Lbs.		Lbs.
Kinmount	4	3,154	3·7	114·7
Lorneville	11	3,252	3·5	115·6
Beaverton	27	3,614	3·6	130·8
Warsaw	39	3,762	3·4	131·0
Oak Leaf	42	3,860	3·6	139·3
Sheffield	18	3,550	3·9	141.7
Brockville	24	4,301	3.4	146·4
Woodburn	57	4,345	3·4	147·8
Milton	33	3,954	3·7	152·6
Shearer	21	4,551	3·3	152·9
Keene	39	4,308	3,5	153·1
Pine Grove	18	4,373	3·5	156·0
Spring Creek	32	4,433	3·5	158·0
Central Smith	41	4,866	3.3	163·0
North Oxford	33	5,136	3·4	176·0
East and West Oxford	26	5,412	3·3	181·7
Culloden	144	5,146	3·5	181·9

Average yield of the above 609 cows, 4,491 lb. milk, 3·5 test, 158·0 lb. fat.

Adding 7 per cent to these averages, as already explained, the actual production of these 609 cows for the full period of lactation may be taken as approximately 4,805 lb. milk, 169·0 lb. fat.

AVERAGE YIELD OF 153 COWS TESTED FOR 7 MONTHS, 1907, IN P. E. ISLAND AND BRITISH COLUMBIA.

Name of Association.	No. of Cows.	Average Milk.	Average Test.	Average Fat
		Lbs.		Lbs.
New Glasgow, P.E.I.	32	3546	3.5	124.1
Cowichan, B.C.	22	3240	4.1	133.6
Chilliwack, B.C.	18	4540	3.3	152.9
Eden Bank, B.C.	81	4522	4.0	183.3

Average yield of the above 153 cows, 4,136 lb. milk, 3·8 test, 160·2 lb. fat.

AVERAGE YIELD OF 477 COWS TESTED FOR 8 MONTHS, 1907, IN ONTARIO AND P. E. ISLAND.

Name of Association.	No. of Cows.	Average Milk.	Average Test.	Average Fat.
		Lbs.		Lbs.
Beaverton	27	3923	3.6	140.5
Lorneville	9	4039	3.5	140.1
Woodburn	17	4207	3.4	144.6
Oak Leaf	19	4333	3.7	160.0
Warsaw	21	4733	3.5	165.0
Milton	17	4438	3.8	166.6
Shearer	14	4755	3.5	170.1
Pine Grove	64	4876	3.5	171.0
Keene	19	4903	3.4	171.0
Brockville	22	5340	3.2	174.7
Sheffield	18	5075	3.6	185.5
Central Smith	38	5657	3.3	185.7
East and West Oxford	33	5715	3.3	190.1
Spring Creek	44	5306	3.6	192.6
Culloden	69	5873	3.4	203.3
North Oxford	33	6740	3.3	225.0
New Glasgow, P.E.I.	13	4182	3.6	148.3

Average yield of these 477 cows recorded 8 months, 5,186 lb. milk, 3·46 test, 179·7 lb. fat.

With an additional 5 per cent to these average weights, as explained already, the approximate actual production of the 477 cows for their full milking period may be taken at 5,445 lb. milk, 188·6 lb. fat.

AVERAGE YIELD OF 186 COWS TESTED FOR 9 MONTHS, 1907, IN ONTARIO.

Name of Association.	No. of Cows.	Average Milk.	Average Test.	Average Fat.
	Lbs.	Lbs.		Lbs.
Milton	9	4,235	3.8	159.7
Shearer	12	4,996	3.3	165.7
Woodburn	4	4,547	3.6	166.1
Pine Grove	7	4,929	3.5	176.2
Warsaw	28	5,590	3.3	184.3
Lorneville	2	5,972	3.4	203.7
Central Smith	12	6,551	3.3	214.4
Spring Creek	66	6,183	3.6	223.1
Keene	4	6,627	3.4	222.9
North Oxford	23	6,736	3.3	228.9
East and West Oxford	19	7,301	3.4	248.0

Average yield of the 186 cows, 6,054 lb. milk, 3·46 test, 210·0 lb. fat.

AVERAGE YIELD OF 74 COWS TESTED 10 MONTHS, 1907, IN ONTARIO.

Name of Association.	No. of Cows.	Average Milk.	Average Test.	Average Fat.
		Lbs.		Lbs.
Shearer	10	5,961	3.5	211.3
Keene	7	6,262	3.4	217.1
Spring Creek	36	7,391	3.0	223.8
North Oxford	17	7,255	3.4	249.0
East and West Oxford	4	8,302	3.2	265.3

Average yield of the 74 cows, 7,081 lb. milk, 3·2 test, 229·3 lb. fat.

AVERAGE YIELD OF 9 COWS TESTED 11 MONTHS, 1907, IN ONTARIO.

Name of Association.	No. of Cows.	Average Milk.	Average Test.	Average Fat.
		Lbs.		Lbs.
Shearer	2	6,952	3.5	242.5
Keene	3	7,673	3.5	267.2
North Oxford	4	7,802	3.5	273.2

Average yield of the 9 cows, 7,579 lb. milk, 3·5 test, 272·2 lb. fat.

ONE COW RECORDED FOR 12 MONTHS, 1907, IN ONTARIO.

Name of Association.	No. of Cows.	Milk.	Average Test.	Fat.
		Lbs.		Lbs.
North Oxford	1	8,455	3.1	265.0

The yields of 733 individual cows for periods of 8, 9, 10, 11 and 12 months in Ontario associations are classified as follows:—

Number of Months.	Total Yield of Milk in Pounds.									Total No. of Cows.	Number of Herds Represented.	Number of Associations.
	1,000 to 2,000 lb.	2,000 to 3,000 lb.	3,000 to 4,000 lb.	4,000 to 5,000 lb.	5,000 to 6,000 lb.	6,000 to 7,000 lb.	7,000 to 8,000 lb.	8,000 to 9,000 lb.	9,000 to 10,000 lb.			
	No. of Cows.	No. of Cows.	No. of Cows.	No. of Cows.	No. of Cows.	No of Cows.	No. of Cows.	No. of Cows.	No. of Cows			
8	.....	10	44	161	96	120	31	1	.....	463	91	16
9	1	.....	2	37	55	39	37	8	6	185	41	11
10	.....	.....	2	.....	8	27	21	11	6	75	20	3
11	.....	.....	.....	.....	.....	3	4	.....	2	9	5	3
12	.....	.....	.....	.....	.....	.....	.....	1	.....	1	1	1
Total No. of cows.	1	10	48	198	159	189	93	21	14	733		

Thus, out of 733 cows, 189 of them, or over 25 per cent, gave yields of milk varying between 6,000 lb. and 7,000 lb. each, for the full lactation period. Of those 189, 120 of them were milking for 8 months, 39 for 9 months, 27 for 10 months, and 3 for 11 months.

LORNEVILLE, ONT., ASSOCIATION.

Sixteen cows tested for 6 months averaged 2,916 lb. milk, 3·5 test, 102·6 lb. fat.
Eleven cows tested 7 months averaged 3,252 lb. milk, 3·5 test, 115·6 lb. fat.

Nine cows tested 8 months averaged 4,039 lb. milk, 3·5 test, 140·1 lb. fat.
Two cows tested 9 months averaged 5,972 lb. milk, 3·4 test, 203·7 lb. fat.

BEAVERTON, ONT., ASSOCIATION.

The cows in this association were mostly grade Shorthorns. The 24 cows recorded for 6 months had an average yield of 3,364 lb. milk, 3·6 test, 122·6 lb. fat. The highest individual yield of milk was 4,464 lb. from a 9-year-old. The highest yield of fat during the six months was 175·6 lb. also from a 9-year-old.

The 27 cows recorded for 7 months gave an average of 3,614 lb. milk, 3·6 test, 130·8 lb. fat, only slightly more than the 6 months' average. The best individual yield was 5,375 lb. milk, 3·4 test, 184 lb. fat from a 9-year-old.

Out of the 27 cows recorded for 7 months, 8 of them gave less than the average of those recorded for 6 months. Similarly, 8 out of the 27 recorded for 8 months gave less than the average yield of those recorded for 7 months.

The average yield of 27 cows tested for 8 months was 3,923 lb. milk, 3·6 test, 140·5 lb. fat. The best record for 8 months was from a 5-year-old that gave 5,765 lb. milk, 3·5 test, 202·4 lb. fat. An 8-year-old cow in the same herd gave 1,440 lb. milk and 34·5 lb. fat less than that record during the eight months. Some cows in the Central Smith Association gave over 8,000 lb. milk in 8 months.

These averages indicate clearly the general room for improvement; the highest yields recorded should show to interested members the possibilities of the district; and the contrasts noted above indicate the need for selection.

KINMOUNT, ONT., ASSOCIATION.

Nine cows recorded for 6 months had an average production of 2,539 lb. milk, 3·6 test, 89·4 lb. fat.

The best individual yield was 4,075 lb. milk, 3·2 test, 130·1 lb. fat, so that better results are obtainable.

The 4 cows tested 7 months gave, on the average, 3,154 lb. milk, 3·7 test, 114·7 lb. fat. The highest yield was 3,970 lb. milk, 3·9 test, 136·3 lb. fat.

This appears to be a district where more attention is necessary to the essentials of good dairying. More liberal feeding and better care of the cows already on hand should speedily work a transformation.

OAK LEAF, ONT., ASSOCIATION.

The average yield of 6 cows for 6 months was 3,006 lb. milk, 3·5 test, 107·5 lb. fat.

The average production of 42 cows for 7 months was 3,860 lb. milk, 3·6 test, 139·3 lb. fat.

The average production of 19 cows for 8 months was 4,333 lb. milk, 3·7 test, 160·0 lb. fat. The best yield during that period was 5,365 lb. milk, 3·9 test, 211·9 lb. fat; and the poorest yield was 3,839 lb. milk, 3·4 test, 128·4 lb. fat, from a 10-year-old cow.

WOODBURN, ONT., ASSOCIATION.

The average production of 34 cows for 6 months was 3,914 lb. milk, 3·4 test, 133·2 lb. fat.

In one herd a 4-year-old cow gave only 4,325 lb. milk (though this is higher than the general average production), but a 5-year-old in the same herd gave 6,530 lb. milk in the same time, just 2,205 lb. more.

The average production of 57 cows for 7 months was 4,345 lb. milk, 3·4 test, 147·8 lb. fat.

The difference between the best and poorest yield of milk from two cows in the same herd was 3,332 lb., which at 90 cents per 100 lb. means $29.98, or at the rate of $4.28 per month difference in the returns per cow.

The average production of 17 cows for 8 months was 4,207 lb. milk, 3·4 test, 144·6 lb. fat.

The average production of 4 cows for 8 months was 4,547 lb. milk, 3·6 test, 166·1 lb. fat.

BROCKVILLE, ONT., ASSOCIATION.

The average yield of 21 cows for 6 months was 4,184 lb. milk, 3·3 test, 140·0 lb. fat.

The average production of 24 cows tested for 7 months was 4,301 lb. milk, 3·4 test, 146·4 lb. fat.

One herd averaged 4,913 lb. milk against 3,421 lb. milk produced by another herd. If the 6 cows in the latter herd had yielded as well on the average as the former herd, they could have put another $81 into the pocket of their owner in the 7 months.

The average production of 22 cows for 8 months was 5,340 lb. milk, 3·2 test, 174·7 lb. fat.

The extremes here are noticeable: a 10-year-old cow gave 7,730 lb. milk, 3·4 test, 265 lb. fat, but a 14-year-old cow gave only 2,650 lb. milk, 3·5 test, 94·4 lb. fat during the same time. This is practically equivalent to saying that one cow is three times as valuable as the other.

WARSAW, ONT., ASSOCIATION.

The average production of 70 cows for 6 months was 3,521 lb. milk, 3·4 test, 121·1 lb. fat. A 6-year-old gave the poorest yield of all the 70 cows, namely 3,130 lb. milk, 3·0 test, 93·3 lb. fat, and a 3-year-old gave the best yield, namely 5,410 lb. milk, 3·6 test, 196·4 lb. fat.

One herd of 15 cows averaged only 3,185 lb. milk, while a herd of 9 close by gave 4,225 lb. milk each. If the 15 cows had been as good producers as the 9, they would have given an extra weight of 15,600 lb. milk, which at 90 cents per 100 lb. would have brought in to their owner an additional sum of $140.40 in the six months.

The average production of 39 cows for 7 months was 3,762 lb. milk, 3·4 test, 131 lb. fat. The highest yield of any one cow was only 4,540 lb. milk, 3·7 test, 171·2 lb. fat.

In this lot of cows recorded 7 months the best cow in one herd brought in $42.80, while the poorest earned only $24.05, or $2.68 per month less. What a revolution there would be in cow land if each individual earned only one dollar per month more than she does at present. Another twenty million dollars is only a low estimate of the extra sum that might come into the pockets of Canadian farmers from this slight increase in the milk production. Is not this well worth keeping in sight?

The average production of 21 cows for 8 months was 4,733 lb. milk, 3·5 test, 165·0 lb. fat.

Twenty-eight cows tested 9 months averaged 5,590 lb. milk, 3·3 test, 184·3 lb. fat.

The highest and lowest yields for this period were both in the same herd of 13 cows; in the one case a 6-year-old gave 3,882 lb. milk, 3·3 test, 124·3 lb. fat, while the best cow gave 7,557 lb. milk, 3·3 test, 244·4 lb. fat.

PINE GROVE, ONT., ASSOCIATION.

The average production of 31 cows for 6 months was 3,120 lb. milk, 3·4 test, 107·4 lb. fat. The variation was all the way from 2,695 lb. milk to 4,050 lb.; in each case the cow was 11 years old.

The average production of 18 cows for 7 months was 4,373 lb. milk, 3·5 test, 1,560 lb. fat.

The average production of 64 cows for 8 months was 4,876 lb. milk, 3·5 test, 171·0 lb. fat. The poorest yield was that of a 6-year-old cow giving 3,230 lb. milk, 3·6 test, 117·0 lb. fat; while the best yield was that of a 5-year-old, 6,730 lb. milk, 3·4 test, 233·5 lb. fat, practically double.

The average yield of 7 cows for 9 months was 4,929 lb. milk, 3·5 test, 176·2 lb. fat.

CENTRAL SMITH, ONT., ASSOCIATION.

The average yield of 11 cows for 6 months was 4,056 lb. milk, 3·3 test and 132·5 lb. fat. The best individual yield was 4,880 lb. milk, 3·0 test, 145 lb. fat. Five cows in two herds, being representatives of the Jersey, Shorthorn and Ayrshire breeds, as well as so-called 'scrub' animals were below the average yield, indicating that selection is necessary and requisite as well in one breed as another. No one of these 5 cows was under 5 years old; one was 12.

Forty-one cows recorded for 7 months had an average yield of 4,866 lb. milk, 3·3 test, 163 lb. fat. Herd 19 has the very satisfactory average from 20 cows, including 2 3-year-olds, for 7 months, of 5,243 lb. milk and 172·5 lb. fat, thus being well above the average. In this herd the highest individual yield was 6,850 lb. milk and 202·9 lb. fat. As a contrast to this herd average, another herd of 5 cows had an average yield of only 3,726 lb. milk, 3·2 test, 120·9 lb. fat; the youngest cow was 6 years old, and the best individual yield was 4,430 lb. milk, 3·1 test, 138·0 lb. fat.

Thirty-eight cows tested 8 months gave an average yield of 5,657 lb. milk, 3·3 test, 185·7 lb. fat.

The average yield of herd 20 for 8 months was 7,246 lb. milk, 3·4 test, 246·4 lb. fat. One would naturally suppose that must be a fine herd. A closer examination of the records reveals immediately that the high average was due entirely to the heavy production of one cow, an 8-year-old that gave 11,720 lb. milk, 2·9 test, 342·8 lb. fat. Six of the remaining seven animals were below the herd average. The lowest yield was from a 4-year-old that gave 5,680 lb. milk, 3·8 test, 215 lb. fat, a decidedly different yield from 11,720 lb. This, again, lends emphasis to the paramount importance of considering each animal in the herd on its own individual merits, its ability to produce milk and butter fat economically, instead of resting content with fair 'average' yields.

Twelve cows tested 9 months gave, on the average, 6,551 lb. milk, 3·3 test, 214·4 lb. fat. The best yield was 8,152 lb. milk, 3·2 test, 258·5 lb. fat from a 7-year-old grade.

KEENE, ONT., ASSOCIATION.

The average yield of 21 cows for 6 months was 4,052 lb. milk, 3·3 test, 137·2 lb. fat.

The average production of 39 cows for 7 months was 4,308 lb. milk, 3·5 test, 153·1 lb. fat. One herd of 4 cows averaged only 3,293 lb. milk each in the 7 months. Another herd of 5 cows averaged 224·6 lb. milk more, or 5,539 lb. each during the same time. The 4 cows should easily have brought in $15 each more than they did to their owner, and probably would have done so if they had had some green soiling crops.

The average production of 19 cows for 8 months was 4,903 lb. milk, 3·4 test, 171 lb. fat.

In the group tested for 8 months one herd of 4 cows had an average of 3,985 lb. milk, 3·5 test, 141·4 lb. fat; the best yield was 5,815 lb. milk, 3·2 test, 183·5 lb. fat, and the poorest yield was from a 7-year-old, 2,645 lb. milk, 3·2 test, 85·4 lb. fat, or almost 100 lb. of fat less.

Another lot of 4 cows gave, in 8 months, 6,558 lb. milk, 3·3 test, 219·6 lb. fat, or an average of 2,573 lb. milk each more than the 4 noted above. In this herd the highest yield was 8,135 lb. milk, 3·6 test, 292·8 lb. fat; and the lowest, from a

4-year-old, 4,990 lb. milk, 3·1 test, 156·3 lb. fat, or 136·5 lb. fat less than the highest yield.

This clearly indicates the general unevenness in herds, in average and good herds alike, and the necessity of this work of noting the actual production of each single individual.

The average yield of 4 cows for 9 months was 6,627 lb. milk, 3·4 test, 222·9 lb. fat. The highest was 8,151 lb. milk, 3·2 test, 264·3 lb. fat.

For 10 months, the average production of 7 cows was 6,262 lb. milk, 3·4 test, 217·1 lb. fat, or a lower average than those recorded for 9 months. The highest yield was 6,968 lb. milk, 3·3 test, 229·8 lb. fat.

The average production for 11 months of 3 cows was 7,673 lb. milk, 3·5 test, 267·2 lb. fat. The best individual cow gave 8,505 lb. milk, 3·5 test, 294·1 lb. fat.

SHEARER, ONT., ASSOCIATION.

Twenty cows tested for 6 months averaged 3,990 lb. milk, 3.3 test, 131 lb. fat.

Twenty-one cows tested for 7 months averaged 4,551 lb. milk, 3.3 test, 152.9 lb. fat.

The average yield of 14 cows for 8 months was 4,755 lb. milk, 3·5 test, 170·1 lb. fat.

Twelve cows tested for 9 months averaged, 4,996 lb. milk, 3.3 test, 165.7 lb. fat. The highest yield was 5,330 lb. milk, 3·4 test, 191·7 lb. fat, valued at 25 cents per lib. fat, $47.92; but the lowest yield was only 3,250 lb. milk, 3·7 test, 118·9 lb. fat, valued at 25 cents per lb. fat, $29.72, or $18.20 less.

For 10 months, 10 cows gave an average yield of 5,961 lb. milk, 3·5 test, 211·3 lb. fat.

Two cows tested for 11 months averaged 6.952 lb. milk, 3·5 test, 242·5 lb. fat.

ROCKFORD, ONT., ASSOCIATION.

The average production of 28 cows for 6 months was 5,206 lb. milk, 3·3 test, 171·4 lb. fat. One herd of 20 cows had the very satisfactory average of 5,656 lb. milk, 3·2 test, 183·2 lb. fat; so evidently, the remaining eight cows must have been dreadfully low in yield to affect the general average so materially.

The best individual record was from a 6-year-old grade that gave 7,012 lb. milk, 3·1 test, 222·7 lb. fat. The lowest record was from an 11-year-old that gave only 4,080 lb. milk, 3·5 test, 143·0 lb. fat, or nearly twenty dollars worth of butter fat less than the best record.

SHEFFIELD, ONT., ASSOCIATION.

The average production of 30 cows for 6 months was 3,350 lb. milk, 3·7 test, 124.4 lb. fat. The best herd average was 3,627 lb. milk, 3.7 test, 135.2 lb. fat from 7 cows. The highest individual yield was 4,730 lb. milk 3·5 test, 165·8 lb. fat; while in the same herd a 10-year-old cow gave only 2,340 lb. milk, 4·0 test, 93·1 lb. fat.

Eighteen cows in 7 months averaged 3,550 lb. milk, 3.9 test, 141.7 lb. fat. Four cows comprising one herd gave only 2,308 lb. milk each, but another herd of four cows produced 4,245 lb. milk each.

The average yield of 18 cows for 8 months was 5,075 lb. milk, 3·6 test, 185·5 lb. fat. The lowest yield of milk was 4,040 lb. from a 3-year-old, while the highest, from an 8-year-old in the same herd, was 2,700 lb. *more,* or 6,740 lb. in all. With milk at 90 cents per 100 lb. the one cow's revenue was $24.30 greater than the other's.

MILTON, ONT., ASSOCIATION..

The records for 6 months show 17 cows to have given an average of 3,184 lb. milk, 3·8 test, 120 lb. fat. The best individual yield was 5,584 lb. milk.

The average production of 33 cows for 7 months was 3,954 lb. milk, 3·7 test, 152·6 lb. fat. One herd of 7 cows gave an average yield of 4,510 lb. milk, 3·9 test, 177·8 lb. fat; but another herd of 5 cows gave only 3,041 lb. milk, 3·6 test, 110·2 lb. fat.

Seventeen cows' records for 8 months averaged 4,438 lb. milk, 3·8 test, 166·6 lb. fat.

The highest yield of any one cow was 7,630 lb. milk, 3·2 test, 242·3 lb. fat. The 5 best cows gave altogether 29,536 lb. milk, 1,049·3 lb. fat; but the 5 poorest gave only 17,276 lb. milk, 658·4 lb. fat. This is a difference of 12,260 lb. milk and 390·9 lb. fat; or, with fat at 25 cents per lb. the 5 best cows recorded for 8 months gave $97.72 more than the 5 poorest.

Nine cows were tested 9 months, and gave 4,235 lb. milk, 3·8 test, 159·7 lb. fat. This means one whole month longer in which to milk them every night and morning for less milk than those milked 8 months.

Taking all the cows recorded for 6, 7 and 8 months, and calculating fat at 25 cents per lb., there was an average difference of $4.13 per month between the earning power of the best and poorest cow. If these records had been extended to 10 months, which is not too long a milking period, the difference in revenue between two cows would have stood at $41.30. This is what testing reveals.

CULLODEN, ONT., ASSOCIATION.

The average production of 38 cows recorded for 6 months was 4,323 lb. milk, 3·6 test, 154·3 lb. fat.

There was but very slight variation among the general average production of each herd, but between the best and poorest cow in the same herd the difference in yield was as high as 2,760 lb. milk and 98 lb. fat, and in no case was the poor yield from any cow under 5 years old.

The average yield of 144 cows for 7 months was 5,146 lb. milk, 3·5 test, 181·9 lb. fat. One herd of 54 cows had an average of 5,478 lb. milk, 3·6 test, 201·1 lb. fat. The highest individual yield of any cow was 8,570 lb. milk, 3.3 test, 288.9 lb. fat; the lowest yield in the same herd was from a 6-year-old cow that gave 4,119 lb. milk, 3·8 test, 156·2 lb. fat, or *less than half* the weight of milk.

The average yield of 69 cows tested for 8 months was 5,873 lb. milk, 3·4 test, 203·3 lb. fat. The average yield of 23 cows in one herd was 6.018 lb. milk, 3·5 test, 209·3 lb. fat. The best individual production was 8,220 lb. milk, 3·2 test, 266·0 lb. fat; the poorest was, from a 7-year-old, 4,240 lb. milk, 3·4 test, 144·2 lb. fat.

The poorest cow in each of the 5 herds recorded for 8 months was, on the average, 1,256 lb. milk lower than the general average of production. There are probably thousands of cows now being kept that should easily earn at least eleven dollars each more during the year than they do at present.

SPRING CREEK, ONT., ASSOCIATION.

The average yield of 20 cows for 6 months was 3,369 lb. milk, 3·5 test, 119·7 lb. fat.

The average production of 32 cows for 7 months was 4,433 lb. milk, 3·5 test, 158·0 lb. fat. The lowest yield was 3,628 lb. milk, 3·1 test, 111·1 lb. fat from a 6-year-old cow; but the highest yield was 6,460 lb. milk, 3·6 test, 230·2 lb. fat.

The average production of 44 cows for 8 months was 5,306 lb. milk, 3·6 test, 192·6 lb. fat.

One herd of 6 cows had an average of 6,602 lb. milk, 3·4 test, 228·8 lb. fat.

The highest individual yield was 7,080 lb. milk, 3·8 test, 264·4 lb. fat, but the lowest was, from a 12-year-old, 3,370 lb. milk, 4·1 test, 136·6 lb. fat. The possibilities are evident.

The average production of 66 cows for 9 months was 6,183 lb. milk, 3·6 test, 223·1 lb. fat.

One herd of 6 cows gave the very satisfactory average of 9,260 lb. milk, 3·3 test, 306·8 lb. fat.

In another herd the best individual yield was 10,570 lb. milk, 3·2 test, 335·2 lb. fat from a 7-year-old; in the same herd a 7-year-old, also, gave the poorest yield, scarcely half as much.

COMPARISONS FOR 10 MONTHS, 1907.

Average Production of Herds.					Yield of Best Cow in each Herd.				Yield of Poorest Cow in each Herd.			
Herd No.	No. of Cows in Herd.	Milk.	Test.	Fat.	Age.	Milk.	Test.	Fat.	Age.	Milk.	Test.	Fat.
		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.
A	6	7,068	3·5	246·2	7	10,570	3·2	335·2	5	5,510	3·6	197·9
B	5	6,428	4·4	280·3	8	6,980	4·4	305·3	6	4,780	5·1	244·9
C	8	8,597	3·5	302·9	7	10,944	3·4	374.7	4	7,100	3·6	253·0
D	6	9,373	3·8	352·3	8	10,528	4·4	464·1	10	9,450	3·7	352·4

The average production of 36 cows for 10 months was 7,391 lb. milk, 3·0 test, 223·8 lb. fat.

While 3 individual records are particularly encouraging, it should be noted that the 4 poorest cows in each herd are just 3,045 lb. milk, 3·6 test, 108 lb. lower than the yields of the best cows. Such a marked difference indicates the room that exists for raising the production of some individual animals, or else getting rid of them. For instance, can the poorest cow in herd B be made to yield as much as the poorest cow in herd D, or should she be discarded?

NORTH OXFORD, ONT., ASSOCIATION.

The average production of 16 cows for 6 months was 3,717 lb. milk, 3·5 test, 129·1 lb. fat.

The average yield of 33 cows for 7 months was 5,136 lb. milk, 3·4 test, 176·0 lb. fat. As revealing differences in yield between herds and individuals the following comparisons are interesting.

COMPARISONS FOR 7 MONTHS.

Herd.	No. of Cows in herd.	Herd Average.			Yield of Best Cow.				Yield of Poorest Cow.			
		Milk.	Test.	Fat.	Age.	Milk.	Test.	Fat.	Age.	Milk.	Test.	Fat.
		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.
A	4	3912	3·4	132·7	5	4,616	3·3	151·6	10	3,325	3·9	133·0
B	8	5053	3.5	175·6	6	6,000	3·1	213·2	5	4,553	3·4	157.6
C	6	7178	3·3	240·7	10	6,875	3·9	269·4	5	7,100	3·1	217.5

Two cows in herd C gave within 92 lb. milk of the total weight given by four cows in herd A. The poorest cow in herd A gave 3,775 lb. milk, 84·5 lb. fat *less* than the poorest cow in herd C.

The average production of 33 cows for 8 months was 6,740 lb. milk, 3·3 test, 225 lb. fat. One herd of 12 cows gave an average of 7,498 lb. milk, 3·3 test, 249·2 lb. fat. The lowest yield of a 6-year-old cow in one herd was 6,202 lb. milk, 3·1 test, 190·1 lb. fat. The highest yield of milk was 8,860 lb., testing 2·9.

The average yield for 9 months of 23 cows was the same weight of milk as given by those recorded 8 months, namely, 6,736 lb., testing the same. There was no higher yield in 9 months than the 8,860 lb. given in only 8 months. In fact the heaviest flow was 8,540 lb., testing 3·3, thus containing 27·2 lb. fat more than the 261·0 lb. in the 8,860 lb. milk.

The average production of 17 cows for 10 months was 7,255 lb. milk, 3·4 test, 249·0 lb. fat. The best yield was 8,750 lb., testing 3·5, and the poorest was, from a 7-year-old, 5,415 lb. testing 3·6.

Four cows were recorded for 11 months; the average was 7,802 lb. milk, 3·5 test, 273·2 lb. fat. The highest yield was, from a 3-year-old, 12,495 lb. milk, 3·2 test, 401·3 lb. fat. The photo of this cow was in last year's report. The lowest yield was also from a 3-year-old, 6,225 lb. milk, 3·5 test, 222·3 lb. fat.

One cow recorded for 12 months gave 8,455 lb. milk, 3·1 test, 265 lb. fat.

EAST AND WEST OXFORD, ONT., ASSOCIATION.

The average yield of 26 cows for 6 months was 4,322 lb. milk, 3·5 test, 151·3 lb. fat. A 6-year-old cow gave the poorest result, 2,760 lb. milk, 3·6 test, 100·9 lb. fat; while the best yield was 6,030 lb. milk, 3·5 test, 213·6 lb. fat to the credit of a 9-year-old. This was more than twice as much.

The average production of 26 cows for 7 months was 5,412 lb. milk, 3·3 test, 181·7 lb. fat. Another 6-year-old cow in another herd was again responsible for the lowest yield, 3,900 lb. milk, 3·3 test, 130·3 lb. fat. During the same 7 months an 8-year-old gave the highest yield, 8,141, lb. milk, 3·4 test, 273·3 lb. fat, which was again double the yield of the poorest cow.

The average production of 33 cows for 8 months was 5,715 lb. milk, 3·3 test, 190·1 lb. fat. When during that time one cow gave 294·8 lb. fat, and another cow only 131·4 lb. fat, the advantages of keeping records is immediately apparent.

COMPARISONS FOR 8 MONTHS, 1907.

	Herd Average.				Highest Individual Yield.				Lowest Individual Yield.			
Herd No.	No. of Cows.	Milk.	Test.	Fat.	Age.	Milk.	Test.	Fat.	Age.	Milk.	Test.	Fat.
		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.
A	10	4,311	3·3	146·2	8	5,210	3·4	179·0	4	3,620	3·6	131·4
B	9	5,577	3·4	193·0	4	5,880	3·8	223·8	6	5,305	3·3	176·5
C	6	7,680	3·2	248·9	10	8,145	3·6	294·8	7	8,607	3·0	261·5

The 19 cows recorded for 9 months averaged 7,301 lb. milk, 3·4 test, 248 lb. fat. The herd and individual records are so dissimilar that a perusal of the details below is suggestive in the extreme.

COMPARISONS FOR 9 MONTHS, 1907.

Herd No.	Herd Average.				Highest Individual Yield.				Lowest Individual Yield.			
	No. of Cows.	Milk.	Test.	Fat.	Age.	Milk.	Test.	Fat.	Age.	Milk.	Test.	Fat.
		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.
A	11	6,814	4·0	242·6	5	11,535	3·2	364·3	5	4,260	3·8	162·1
B	6	8,423	3·1	266·5	3	9,769	3·7	357·8	8	6,649	3·0	202·8

The average production of 4 cows for 10 months was 8,302 lb. milk, 3·2 test, 2,653 lb. fat.

NEW GLASGOW, PRINCE EDWARD ISLAND, ASSOCIATION.

Forty-seven cows recorded for 6 months gave an average yield of 3,102 lb. milk, 3·8 test, 117·9 lb. fat. Four cows comprising one dairy gave only 2,800 lb. milk, 3·7 test, 103·9 lb. fat; but the average of another dairy herd of 7 cows was 3,348 lb. milk, 4·1 test, 139·0 lb. fat. One 5-year-old cow gave only 2,575 lb. milk, 3·4 test, 88·3 lb. fat; but an 8-year-old gave 3,860 lb. milk, 3·8 test, 148·6 lb. fat, thus earning at least $15 more in the 6 months.

The average production of 32 cows for 7 months was 3,546 lb. milk, 3·5 test, 124·1 lb. fat. The lowest yield of milk from any one cow was 3,119 lb. testing 3·7, and the highest was 4,843 lb. testing 3·2 per cent fat.

Thirteen cows averaged for 8 months 4,182 lb. milk, 3·6 test, 148·3 lb. fat.

COWICHAN, B.C., ASSOCIATION.

Forty-eight cows in 14 herds recorded for 6 months gave an average yield of 3,191 lb. milk, 4·2 test, 132·8 lb. fat.

Twenty-two cows in 7 herds recorded for 7 months gave an average yield of 3,240 lb. milk, 4·1 test, 133·6 lb. fat.

EDEN BANK, B.C., ASSOCIATION.

Sixty-seven cows were recorded for 6 months, with an average production of 3,751 lb. milk, 4·1 test, 153·0 lb. fat.

The poorest herd had an average yield of 110·7 lb. fat, and the best herd gave 210·8 lb. fat. In the one case 5 cows gave a total yield of 553·7 lb. fat, while in the other case 6 cows gave a total yield of 1,264·9 lb. fat.

The extremes of milk yield in the 6 months were 2,165 lb. from the poorest, and 6,020 lb. from the best cow; 33 cows out of the total of 67 gave less than 3,700 lb.

In 13 herds 81 cows were recorded for 7 months, the average production per cow being 4,522 lb. milk, 4·0 test, 183·3 lb. fat. The lowest average herd yield was from a lot of 3 cows giving only 3,423 lb. milk, 4·0 test, 137·3 lb. fat. Three herds are worthy of special note; one of 28 cows averaged 4,550 lb. milk, 4·2 test, 192 lb. fat, this included the yields of 5 2-year-olds and 5 3-year-olds; another herd of 10 cows averaged 5,588 lb. milk, 3·8 test, 214 lb. fat, and one herd of 5 cows averaged 5,934 lb. milk, 3·9 test, 228·0 lb. fat.

It will be observed that the poorest herd is 1,099 lb. milk and 46·0 lb. fat below the average yield, while the best herd is actually 2,511 lb. milk and 90·7 lb. fat above.

The lowest individual yield in all herds was on the average 1,856 lb. milk and 75·4 lb. fat less than the highest during the 7 months. Make a liberal deduction of one-third from this difference, and the fact appears that scores of cows in this association should have brought in about $15 apiece more than they did in 7 months.

CHILLIWACK, B.C., ASSOCIATION.

Thirty-three cows were tested for 6 months with an average record of 3,630 lb. milk, 3·8 test, 139·0 lb. fat.

Valuing fat at 25 cents per lb., the poorest individual yield in one herd was $11.38 below the best individual yield.

Eighteen cows were tested for 7 months, and averaged 4,540 lb. milk, 3·3 test, 152·9 lb. fat.

The highest yield was 6,364 lb. milk, 4·2 test, 266·8 lb. fat, but the lowest was less than half that, or only 3,105 lb. milk, 3·6 test, 113·7 lb. fat from a 7-year-old cow that calved April 11.

This system of weighing and sampling certainly does reveal some unprofitable servants.

Associations in Quebec.

AVERAGE YIELD OF 652 COWS TESTED FOR 6 MONTHS, 1907, IN QUEBEC.

Name of Association.	No. of Cows.	Average Milk.	Average Test.	Average Fat.
		Lbs.		Lbs.
St. Armand	30	2,586	4·0	107·1
Hatley	13	2,782	3·9	110·2
Dixville	37	2,778	4·0	111·3
Cowansville	24	2,961	3·9	115·0
St. Dominique	52	2,716	4·6	116·6
St. Barnabe	14	3,088	3·8	117·7
St. Jerome	15	2,858	4·2	119·7
Henryville	101	3,278	3·7	123·6
Coaticook	25	3,216	4·0	128·2
Ste. Emelie	74	2,985	4·2	125·5
St. Marc	63	3,324	3·9	130·0
Chicoutimi	9	3,153	4·1	131·1
St. Prime	20	3,119	4·2	132·8
St. Edwidge	33	3,494	3·8	133·0
Mansonville	6	3,375	4·2	142·4
Ormstown	35	3,953	3·7	147·0
Bagotville	9	3,738	4·1	152·7
Lotbiniere	34	3,837	4·1	156·7
St. Prosper	58	4,211	4·0	170·0

Average yield of all the 652 cows, 3,266 lb. milk, 4·0 test, 130·3 lb. fat.

Probably the low average yields in one or two districts can be accounted for by the fact that the owners were not working the farms, but had them rented out. Hence there was not much incentive to the tenants to test, or, should we not rather say, the tenants did not seem to realize the need or importance of looking for better returns per cow.

When such a startling difference is noticed as is found between the average yields at St. Armand and St. Prosper, equal to 1,616 lb. milk and 66·2 lb. fat per cow in 6 months, it is surely time to see if many cows cannot be made to earn at least $16 more.

It will be observed how many districts fall below the average yield of milk and fat; while on the other hand the 58 cows at St. Prosper were as much as 900 lb. milk and 38·8 lb. fat above the average.

AVERAGE YIELD OF 473 COWS TESTED FOR 7 MONTHS, 1907, IN QUEBEC.

Name of Association.	No. of Cows.	Average Milk.	Average Test.	Average Fat.
		Lbs.		Lbs.
St. Jerome	24	3,177	3·9	123·4
St. Armand	16	3,181	4·1	124·0
St. Dominique	30	3,090	4·2	129·1
St. Emelie	20	3,073	4·2	130·7
Hatley	47	3,291	4·0	130·7
Dixville	26	3,470	4·0	136·8
Lotbiniere	13	3,575	3·9	140·4
St. Edwidge	57	3,680	3·9	143·4
Henryville	23	3,740	3·8	143·5
Chicoutimi	30	3,512	4·1	144·2
Cowansville	19	3,689	3·9	144·8
Coaticook	29	3,984	4 0	159·3
Bagotville	81	4,096	4·2	164·7
Mansonville	16	4,281	4·1	176·9
St. Marc	18	4,634	3·9	182·0
Ormstown	6	6,085	3·3	199·0
St. Prosper	6	5,448	3·9	214·0
St. Barnabe	2	3,272	4·1	135·7

Average yield of all the 473 cows, 3,749 lb. milk, 4·0 test, 149·0 lb. fat.

AVERAGE YIELD OF 166 COWS TESTED FOR 8 MONTHS, 1907, IN QUEBEC.

Name of Association.	No. of Cows.	Average Milk.	Average Test.	Average Fat.
		Lbs.		Lbs.
Dixville	40	4,024	3·8	154.5
Chicoutimi	52	3,900	4·0	158·8
Hatley	19	4,094	4·0	162·5
Cowansville	28	4,591	4·0	185·9
St. Edwidge	27	4,496	3·8	172·7

Average yield of all the 166 cows, 4,165 lb. milk, 4·0 test, 165·0 lb. fat.

AVERAGE YIELD OF 49 COWS TESTED FOR 9 MONTHS, 1907, IN QUEBEC.

Name of Association.	No. of Cows.	Average Milk.	Average Test.	Average Fat.
		Lbs.		Lbs.
Hatley	13	4,186	4·0	167·4
Dixville	15	4,802	3·7	178·3
Cowansville	15	4,281	4·3	183·5
St. Edwidge	6	4,342	4·2	185·3

Average yield of all the 49 cows, 4,423 lb. milk, 4·0 test, 177·9 lb. fat.

AVERAGE YIELD OF 18 COWS TESTED FOR 10 MONTHS, 1907, IN QUEBEC.

Name of Association.	No. of Cows.	Average Milk.	Average Test.	Average Fat.
		Lbs.		Lbs.
Cowansville	14	5,395	4·7	254·6
St. Edwidge	4	4,889	3·8	187·7

Average yield of all the 18 cows, 5,282 lb. milk, 4·5 test, 239·7 lb. fat.

AVERAGE YIELD OF 10 COWS TESTED FOR 11 MONTHS, 1907, IN QUEBEC.

Name of Association.	No. of Cows.	Average Milk.	Average Test.	Average Fat.
		Lbs.		Lbs.
St. Armand	7	4,772	4·1	209·5
St. Edwidge	3	4,793	4·5	217·0

Average yield of the 10 cows, 4,778 lb. milk, 4·4 test, 211·8 lb. fat.

AVERAGE YIELD OF COWS TESTED FOR 12 MONTHS, 1907, QUEBEC.

Name of Association.	Total Number of Cows.	Average Yield.		
		Milk.	Test.	Fat.
		Lbs.		Lbs.
St. Edwidge	20	4,496	3·9	176·4
St. Armand	113	4,375	4·1	180·4
Cowansville	34	5,620	4·7	264·0

Average yield of all the 167 cows, 4,631 lb. milk, 4·2 test, 197 lb. fat.

This average yield for a full period of 12 months must be understood as including one or two particularly good herds in the respective districts, and is not necessarily indicative of the general average yield in the province.

Further, the figures for the 34 cows in three herds at Cowansville are pregnant with suggestion, because one poor herd is included with a particularly low average from 7 common grade cows of 2,780 lb. milk, 4·0 test, 111 lb. fat. This indicates again how misleading 'averages' may be. These seven cows are credited in the 'average' of the 167 with almost double their actual yield.

The second herd in the Cowansville group is one of 6 pure-bred Guernseys and one grade Shorthorn with an average of 5,680 lb. milk, 256·8 lb. fat and 4·5 test, which is more than double that of the herd preceding.

The third herd is a lot of 20 high grade Jerseys that produced on the average 6,593 lb. milk, 4·8 test, 319·8 lb. fat. The owner of this herd estimates the average cost of feed at $45 per cow for the 12 months. This last highly satisfactory record is the result of some years' careful work of recording the individual yield of each cow and discarding the poorest, and may be taken as a standard attainable by any intelligent farmer in Quebec.

SESSIONAL PAPER No. 15a

The yields of 410 individual cows for periods of 8, 9, 10, 11 and 12 months in Quebec associations are classified as follows:—

Number of Months.	Total Yield of Milk in Pounds.									Total No. of Cows.	Number of Herds Represented.	Number of Associations.
	1,000 to 2,000 lb.	2,000 to 3,000 lb.	3,000 to 4,000 lb.	4,000 to 5,000 lb.	5,000 to 6,000 lb.	6,000 to 7,000 lb.	7,000 to 8,000 lb.	8,000 to 9,000 lb.	9,000 to 10,000 lb.			
	No. of Cows.	No. of Cows.	No. of Cows.	No. of Cows.	No. of Cows.	No. of Cows.	No. of Cows.	No. of Cows.	No. of Cows			
8	2	16	59	48	32	9	.....	.....	.....	166	23	5
9	3	8	23	12	3	.....	.....	.....	.....	49	12	4
10	.....	.....	1	3	4	6	4	.....	.....	18	6	2
11	2	1	2	3	1	.....	.....	.....	1	10	3	2
12	4	19	30	48	38	16	7	2	3	167	11	3
Total No. of cows.	11	44	115	114	78	31	11	2	4	410		

Thus, out of 410 cows, 114 of them, or 28 per cent, gave yields of milk varying between 4,000 and 5,000 lb. each for the full lactation period. Of these 114, 48 of them were milking for 8 months, 12 for 9 months, 3 for 10 months, 3 for 11 months and 48 for 12 months.

Mr. I. Trudel, who was doing the testing at five centres in Quebec, reports:—

'In general, there is not as much interest in dairying as some years ago, in the territory I have been travelling in. This is due to the changed conditions by which feed has doubled in price, while labour is also higher, and cows have remained about the same with regard to their capacity as producers. Farmers are inclined to pronounce dairying unprofitable, because it is not comparatively as remunerative as formerly; while it is only their imperfect methods of breeding and feeding that are responsible for this, no improvement having taken place in the quality of the stock or in the production of feed. The same old system of keeping cows on pasture, hay, straw and grain seems to exist generally with but little progress in raising soiling crops and roots. There is no silo in any of the localities where I have been working this summer. There is a tendency to neglect the cows for other lines of farming such as producing hay and grain for the market; or to devote time to lumbering and other commercial operations.

'St. Prosper, St. Marc, and Lotbinière, where the soil is of the very best quality, are producing large quantities of hay, while the chief products at Champlain are oats and potatoes. The conditions at Ste. Emelie are different, the land being poorer and farms in general smaller; and I have found the people there are more easy to interest in dairy matters, as they have to depend a good deal more on their cows for a large proportion of their income.

'I do not think it is an exaggeration to say that in too many parts of Quebec, dairying has only been regarded until now as the most profitable way of disposing of a waste product, milk; keeping cows being considered essential to maintaining the fertility of the soil. The proportion of farmers who have specialized in dairying, making it a business by which they make their farms earn them more profit, is still small. But with the high prices now ruling for all farm products, the cost of keeping cows is forced on the attention of farmers, and our campaign for the improvement of dairy herds is most opportune.

'Unfortunately, farmers are very ignorant on matters concerning breeding and feeding of dairy cattle, and in most cases are sceptical as to the possibility for them coming to own herds of high producing cows, such as are sometimes pointed out to them; or of producing with advantage the crops recommended by the best authorities as good feed for dairy cows. Information on these subjects is very slowly diffused among the farmers in Quebec, as we have no dairy papers in French, and the large daily newspapers do not devote much space to agricultural matters.'

ST. PROSPER, QUE., ASSOCIATION.

The average production of 58 cows for 6 months was 4,211 lb. milk, 4·0 test, 170·0 lb. fat. The poorest yield was 2,910 lb. milk, 3·7 test, 107·8 lb. fat from an 8-year-old cow; but the best yield was 6,775 lb. milk, 4·0 test, 272·0 lb. fat, also from an eight-year-old. There should not be much doubt as to which is the more profitable cow.

The average production of 16 cows for 7 months was 5,548 lb. milk, 3·9 test, 214·0 lb. fat.

ST. MARC, QUE., ASSOCIATION.

The average production of 63 cows for 6 months was 3,324 lb. milk, 3·9 test, 130·0 lb. fat.

Taking the best cow's yield in each of the eight herds represented, it is found that each gave nearly 700 lb. milk and 38 lb. fat above this general average; and when it is pointed out that the best yield of one cow was 1,676 lb. milk and 87 lb. fat above the average yield, and actually 2,750 lb. milk and 138·8 lb. fat above the poorest yield of 2,250 lb. milk, 3·4 test, 78·2 lb. fat given by an 8-year-old, then the immense possibilities involved in selection should begin to dawn on all concerned.

The average production of 18 cows for 7 months was 4,634 lb. milk, 3·9 test, 182·0 lb. fat. In one herd of six cows the best cow gave 1,529 lb. milk and 58·9 lb. fat more than the 5-year-old poorest cow in that same herd during the 7 months.

At St. Marc is one of the oldest factories in Quebec, having been established nearly thirty years ago, but it was receiving at one time nearly double the quantity of milk that is being sent at present. The soil is of the very best quality; and the chief crops raised at St. Marc, as well as in the whole county of Verchères, are hay and oats, hundreds of tons of hay being exported every year to the United States. However, all the farmers are keeping a certain number of cows; but with very few exceptions, they do not pay any particular attention to their dairies, being satisfied to get what they can out of the cows while at pasture, and feeding in the winter on straw and the poorer quality of hay that has not been exported.

Some farmers who used to grow corn and roots some years ago say they have given it up on account of the difficulty in getting help, and others expressed the opinion that it did not pay to try to produce milk in the winter.

The comparative yields of two herds in this association are full of interest. In the first herd 15 cows for the 6 months, June to November, gave an actual yield of 36,555 lb. milk, 1,450 lb. fat. The second herd consisted of only 8 cows, but gave almost as much, namely 35,966 lb. milk, 1,400 lb. fat. Both herds are managed by the same man, but are rented from two different owners. In the first case the owner limited the farmer to pasture for summer, and straw and poor hay for winter; in the second case the owner supplied everything necessary for fairly good feeding. The first herd wintered poorly and was in bad condition in spring. The second herd was wintered on hay, straw and oats cut green, with a ration of bran and other meal. In summer, besides pasture, they got soiling crops, and in the fall they had roots. This is one definite illustration of the necessity of abundant and suitable feed if cows are supposed to yield milk. Eight cows, fed, did the work of 15 that were just kept alive.

LOTBINIÈRE, QUE., ASSOCIATION.

COMPARISON FOR 6 MONTHS, 1907.

Herd.	Number of Cows in Herd.	Average Production of Herds. Milk.	Test.	Fat.	Yield of Best Cow in each Herd. Age.	Milk.	Test.	Fat.	Yield of Poorest Cow in each Herd. Age.	Milk.	Test.	Fat.
		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.
A	8	3,526	4·2	148·0	9	3,870	4·7	181·3	9	2,850	4·7	134·1
B	7	3,838	4·0	152·8	7	5,007	4·0	200·8	6	2,874	4·0	115·3
C	10	3,797	4·1	155·0	6	4,270	4·2	181·7	5	3,410	3·9	133·4
D	6	3,964	4·7	186·0	13	4,182	3·8	159·7	6	4,080	3·3	135·2
E	3	4,423	4·6	206·0	9	4,855	4·5	219·0	6	3,940	4·5	179·1

Average of 34 cows for 6 months, 3,837 lb. milk, 4·1 test, 156·7 lb. fat.

During the 6 months that these 34 cows were recorded, the best cow in herd 'E' gave 1,018 lb. milk and 62·3 lb. fat above the average yield of the 34 cows; but during the same period the poorest cow in herd 'B,' a 6-year-old, gave 963 lb. milk and 41·4 lb. fat below the average of all the 34 cows, while actually falling 2,133 lb. milk and 85·5 lb. fat below the record of the best cow in the same herd with her. Most emphatically let it be repeated, there is urgent need of a careful study of each animal in the herd so that all, every single one, may be brought up to a reasonable standard of production.

COMPARISONS FOR 7 MONTHS, 1907.

Herd.	Number of Cows in Herd.	Average Production of Herds. Milk.	Test.	Fat.	Yield of Best Cow in each Herd. Age.	Milk.	Test.	Fat.	Yield of Poorest Cow in each Herd. Age.	Milk.	Test.	Fat.
		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.
A	5	2,768	4·1	114·9	13	3,350	4·2	139·9	15	2,340	4·0	92·9
B	8	4,080	3·8	156·3	.....	4,460	4·0	177·8	.....	3,990	3·5	141·3

Average of 13 cows for 7 months, 3,575 lb. milk, 3·9 test, 140·4 lb. fat.

ST. BARNABE, QUE., ASSOCIATION.

COMPARISON FOR 6 MONTHS, 1907.

Herd.	Number of Cows in Herd.	Average Production of Herds. Milk.	Test.	Fat.	Yield of Best Cow in each Herd. Milk.	Test.	Fat.	Yield of Poorest Cow in each Herd. Milk.	Test.	Fat.
		Lbs.		Lbs.	Lbs.		Lbs.	Lbs.		Lbs.
A	5	2,828	3·8	108·4	3,370	3·9	130·7	2,130	3·8	81·0
B	4	2,981	3·9	115·1	3,350	4·0	133·9	2,230	3·7	83·8
C	5	3,436	3·7	127·3	3,920	3·7	145·3	2,930	3·3	98·0

The average production of 14 cows for 6 months was 3,088 lb. milk, 3·8 test, 117·7 lb. fat.

The average production of 2 cows for 7 months was 3,272 lb. milk, 4·1 test, 135·7 lb. fat.

HENRYVILLE, QUE., ASSOCIATION.

The average production of the 101 cows tested for 6 months was 3,278 lb. milk, 3·7 test, 123 lb. fat.

The poorest yield was 2,210 lb. milk, 3·5 test, 77·9 lb. fat from a 9-year-old cow, while the best yield was 5,015 lb. milk, 3·4 test, 171·8 lb. fat from a 4-year-old.

The average production of 23 cows for 7 months was 3,740 lb. milk, 3·8 test, 143·5 lb. fat.

ORMSTOWN, QUE., ASSOCIATION.

Thirty-five cows were recorded for 6 months, the average yield being 3,953 lb. milk, 3·7 test, 147 lb. fat.

The production of the best cows in five different herds for six months is given below in tabular form, showing a difference in earning power in six months of $16.89, between the best cow in herd A and the best cow in herd E.

TOTAL PRODUCTION, 6 MONTHS, OF THE BEST INDIVIDUAL COWS IN FIVE DIFFERENT HERDS.

Herd	Breed of Cow.	Date of Calving.	Age.	Milk.	Test.	Fat.	Value of Fat at 25c. per pound.
				Lbs.		Lbs.	$ cts.
A	Grade Ayrshire	April 14	8	3,685	3·6	132·3	33 07
B	"	May 5	9	4,655	3·8	175·4	43 85
C	Grade Holstein	" 3	9	5,100	3·6	183·0	45 75
D	Grade Ayrshire	April 15	9	4,945	3·9	191·5	47 87
E	Grade	May 3	9	5,384	3·7	199·8	49 96

The *best herd* record for 6 months is that of a herd of 6 cows giving an average yield of 3,934 lb. milk, 4·1 test, 160·6 lb. fat.

In that herd the highest yield was 5,384 lb. milk, 3·7 test, 199·8 lb. fat, from a 9-year-old calved May 3, and the lowest yield was 4,087 lb. milk, 4·2 test, 173·0 lb. fat from an eight-year-old calved May 9.

The *poorest herd* record for 6 months is that of a herd of 5 cows with an average yield of 3,202 lb. milk, 3·6 test, 114 lb. fat. In this herd the highest yield was 3,685 lb. milk, 3·6 test, 132·0 lb. fat from an 8-year-old, calved April 14, and the lowest yield was 2,585 lb. milk, 3·5 test, 91·5 lb. fat, from a 5-year-old calved May 12.

These contrasts between the averages of the best and poorest herds, including as they do the highest and lowest yields of any cow in the association, tested for six months, are rendered all the more striking when it is noted that no farrow cows are included, nor any cow under 5 years old. Reduced to a cash basis, it means that one cow in six months brings in over *twenty-seven dollars more* than another. There is certainly an opportunity for selection.

The average yield of 6 cows for 7 months was 6,085 lb. milk, 3·3 test 199·0 lb. fat.

BAGOTVILLE (ST. ALPHONSE), QUE., ASSOCIATION.

The average production of 9 cows for 6 months was 3,738 lb. milk, 4·1 test, 152·7 lb. fat.

The average production of 81 cows for 7 months was 4,096 lb. milk, 4·2 test, 164.7 lb. fat.

The lowest yield of any one cow was 2,800 lb. milk, 3·6 test, 100 lb. fat; but the highest yield was 5,320 lb. milk, 4·4 test, 232·9 lb. fat. Why keep two cows to do the work of one?

ST. PRIME, QUE., ASSOCIATION.

The average production of 20 cows for 6 months was 3,119 lb. milk, 4·2 test, 132·8 lb. fat.

ST. JEROME, QUE., ASSOCIATION.

Fifteen cows averaged for 6 months, 2,858 lb. milk, 4·2 test, 119·7 lb. fat.

Twenty-four cows in 7 months averaged 3,177 lb. milk, 3·9 test, 123·4 lb. fat. In one herd a cow with 4,650 lb. milk produced 19 lb. fat less than another cow with 3,550 lb. milk.

ST. DOMINIQUE (JONQUIÈRES), QUE., ASSOCIATION.

Fifty-two cows averaged for 6 months 2,716 lb. milk, 4·6 test, 116·6 lb. fat.

If these 52 cows had averaged as well as the 20 recorded in the St. Prime association they would have given 30,940 lb. milk more than they actually did in the six months.

Thirty cows averaged in 7 months 3,090 lb. milk, 4·2 test, 129·1 lb. fat.

If these 30 cows had yielded as much milk and butter fat on the average as did the 81 cows recorded in the Bagotville association they would have given 30,180 lb. milk and 1,068·0 lb. fat more than they actually did yield in seven months.

One herd is lagging a long way behind, as the 13 cows had an average yield of 2,585 lb. milk, 4·1 test, 107·0 lb. fat. A herd of 11 cows in the same neighbourhood gave, on the average, 3,589 lb. milk, 4·2 test, 150·1 lb. fat, or over 1,000 lb. milk more in the 7 months. One cow out of the 11 gave 5,295 lb. milk, 4·3 test, 231·9 lb. fat.

CHICOUTIMI, QUE., ASSOCIATION.

The average production of 9 cows for 6 months was 3,153 lb. milk, 4·1 test, 131·1 lb. fat.

Thirty cows tested 7 months averaged 3,512 lb. milk, 4·1 test, 144·2 lb. fat.

The average production of 52 cows for 8 months was 3,900 lb. milk, 4·0 test, 158·8 lb. fat.

Herd 'D' has the commendable average from 23 cows of 4,662 lb. milk, 4·1 test, 194·0 lb. fat, though only slightly better than the 3 best herds in the Bagotville association recorded for only 7 months instead of 8.

The 4 remaining associations of this group in the district of Chicoutimi and Lake St. John, namely Normandin, St. Felicien, St. Charles (La Décharge) and St. Ambroise (Rivière à l'Ours), had no records for a long enough period from which to make deductions.

COATICOOK, QUE., ASSOCIATION.

COMPARISONS FOR 6 MONTHS, 1907.

Herd.	Number of Cows in Herd.	Average Production of Herds.			Yield of Best Cow in each Herd.				Yield of Poorest Cow in each Herd.			
		Milk.	Test.	Fat.	Age.	Milk.	Test.	Fat.	Age.	Milk.	Test.	Fat.
		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.
A	6	2,882	3·7	107·6	5	3,530	3·9	139·6	5	2,205	3·8	84·0
B	3	2,897	3·9	111·8	5	2,875	4·1	117·7	3	2,705	3·9	104·7
C	6	3,067	3·9	121·3	5	3,870	3·9	152·1	5	2,675	4·3	114·0
D	5	3,153	4·1	129·0	9	3,610	4·2	151·9	10	3,110	3·8	117·4
E	4	3,245	4·4	143·2	10	4,065	4·3	177·8	10	3,229	4·2	136·9

The average production of 25 cows for 6 months was 3,216 lb. milk, 128·2 lb. fat; average test 4·0 per cent fat.

Three out of the 5 herds compared did not measure up to the average yield of the 25 cows. As is frequently the case, the general average is greatly helped by one or two good cows. Hence, note the good yield of the 10-year-old cow in herd 'E,' 975 lb. milk and 54·6 lb. fat above the average.

This table indicates the difference in production among herds in the same locality. The average of herd 'E' was 35·6 lb. of fat better than that of herd 'A.' The more important difference to note is that in herd 'A' the poorest cow, 5 years old, not a heifer or a farrow cow, gave 55·6 lb. of fat less than the best cow in that herd during 6 months. This shows the need of studying each individual in the herd to make sure of profit from each.

COATICOOK, QUE., ASSOCIATION.

COMPARISONS FOR 7 MONTHS, 1907.

Average production of Herds.					Yield of Best Cow in each Herd.				Yield of Poorest Cow in each Herd.			
Herd.	Number of Cows in Herd.	Milk.	Test.	Fat.	Age.	Milk.	Test.	Fat.	Age.	Milk.	Test.	Fat.
		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.
A	9	3,385	3·6	123·5	7	4,305	4·3	161·2	9	2,155	4·2	90·5
B	12	3,924	4·1	161·7	5	4,600	5·1	235·2	7	3,155	3·7	117·6
C	8	4,147	4·1	176·8	10	4,682	4·2	196·4	10	3,860	4·1	159·6

The average yield of 29 cows for 7 months was 3,984 lb. milk, 159·3 lb. fat; average test 4·0 per cent fat.

The best cow in herd 'B' gave 800 lb. milk and 81·2 lb. fat more than the average yield of all the 29 cows compared, and out-distanced the 9-year-old cow in herd 'A' by 2,445 lb. milk and 144·7 lb. fat in the 7 months' race.

Such differences should make every dairy farmer inquire into the capacity of every single cow he owns. With milk at $1 per 100 lb. during 1907, the one cow earned $24.45 more than the other, during just 7 months.

STE. EMELIE, QUE., ASSOCIATION.

The average yield of 74 cows for 6 months was 2,985 lb. milk, 4·2 test, 125·5 lb. fat.

Seven cows in one herd averaged only 2,537 lb. milk, 3·9 test, 100·0 lb. fat. In that herd the poorest yield was 2,410 lb. milk, 3·9 test, 94·0 lb. fat from a 5-year-old.

COMPARISONS FOR 7 MONTHS, 1907.

Average Production of Herds.					Yield of Best Cow in each Herd.				Yield of Poorest Cow in each Herd.			
Herd.	No. of Cows in Herd.	Milk.	Test.	Fat.	Age.	Milk.	Test.	Fat.	Age.	Milk.	Test.	Fat.
		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.
A	8	2,849	4·1	117·0	4	3,220	4·1	132·0	4	2,540	3·8	98·0
B	5	3,124	4·4	137·0	12	4,179	4·1	175·0	5	3,000	4·3	130·0
C	7	3,332	4·3	142·0	13	4,660	4·3	196·0	11	3,505	4·1	145·8

The average production of 20 cows for 7 months was 3,073 lb. milk, 4·2 test, 130·7 lb. fat.

In the foregoing table the yield of young stock, 2 and 3-year-olds, has not been given as the 'yield of the poorest cow in each herd,' their low records pull down the average production; but leaving them out, the record of the mature cow with low production is rendered the more unenviable.

MANSONVILLE, QUE., ASSOCIATION.

Out of 110 cows recorded by the members of this association 17 ran for 7 months, 6 for 6 months, 17 for 5 months, and the remainder for less than 5 months.

It would almost appear from this that the real advantages and objects of weighing and sampling are not appreciated. A spasmodic rush to the spring balance will not reveal a cow's capacity of production. The total yield during the full period of lactation must be known before any man can gauge the possibilities of the individual cow. Similar testing associations, wherever inaugurated, invariably have shown that the best records, whether of herds or individuals, are found where there is persistent, not abortive, effort.

Six cows tested for 6 months averaged 3,375 lb. milk, 4·2 test, 142·4 lb. fat.

Sixteen cows in two herds tested for 7 months averaged 4,281 lb. milk, 4·1 test, 176·9 lb. fat.

The average value of production of 9 cows in one herd was $44.50, while the other 8 cows gave $43.25. Is this a pretty even lot? No, for on taking the 9 cows, it is found that the best record was from a 3-year-old that gave 4,850 lb. milk, 4·4 test, 213·9 lb. fat, value $53.47; while the poorest record in that herd was from another 3-year-old that gave 3,320 lb. milk, 4·7 test, 154·9 lb. fat, value $38.72. That is to say, far from being an even lot, there was a difference between these two cows in the same herd, of 1,530 lb. milk, 59 lb. fat, value $14.75. When one cow is found to be earning $2.10 every month more than another, it is evidently to the interest of every dairy farmer to determine for himself which are the profitable cows, and which are not.

DIXVILLE, QUE., ASSOCIATION.

COMPARISONS FOR 6 MONTHS, 1907.

Average Production of Herds.					Yield of Best Cow in each Herd.				Yield of Poorest Cow in each Herd.			
Herd.	No. of Cows in Herd.	Milk.	Test.	Fat.	Age.	Milk.	Test.	Fat.	Age.	Milk.	Test.	Fat.
		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.
A	4	2,474	3·9	96·2	8	2,960	3·8	113·1	2	2,330	3·8	87·8
B	10	2,426	4·0	96·3	9	3,110	4·2	130·0	5	2,585	3·8	98·1
C	5	2,911	3·4	99·2	9	3,125	3·5	110·0	4	2,575	3·6	94·1
D	4	3,039	4·3	130·6	7	3,640	4·0	146·0	5	5,435	3·8	130·9
E	6	2,909	4·7	137·3	6	3,262	5·3	172·0	7	2,630	4·6	122·5

The average yield of 37 cows for 6 months was 2,778 lb. milk, 4·0 test, 111·3 lb. fat.

COMPARISONS FOR 7 MONTHS, 1907.

Average Production of Herds.					Yield of Best Cow in each Herd.				Yield of Poorest Cow in each Herd.			
Herd.	No. of Cows in Herd.	Milk.	Test.	Fat.	Age.	Milk	Test.	Fat.	Age.	Milk.	Test.	Fat.
		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.
A.....	8	3,568	4·0	142·1	6	4,365	4·0	172·0	4	3,370	3·5	117·0
B.....	5	3,520	4·3	150·1	7	4,775	4·6	217·8	6	2,955	4·7	139·6

The average yield of 26 cows for 7 months was 3,470 lb. milk, 4·0 test, 136·8 lb. fat.

COMPARISONS FOR 8 MONTHS, 1907.

Average Production of Herds.					Yield of Best Cow in each Herd.				Yield of Poorest Cow in each Herd.			
Herd.	No. of Cows in Herd.	Milk.	Test.	Fat.	Age.	Milk.	Test.	Fat.	Age.	Milk.	Test.	Fat.
		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.
A.....	5	3,340	3·7	125·0	8	4,220	3·7	156·2	12	2,945	3·6	105·9
B.....	4	3,267	4·0	129·6	8	3,690	3·9	144·8	4	2,540	4·2	105·8
C.....	6	4,046	3·8	155·0	12	5,105	3·6	183·9	10	3,005	4·5	136·7
D.....	6	4,047	3·9	156·6	9	5,065	3·7	185·9	5	3,820	3·8	145·9
E.....	5	4,066	4·3	173·8	8	4,570	4·3	196·8	5	3,165	4·2	134·0
F.....	4	5,195	3·5	181·3	6	6,015	3·5	210·3	7	4,796	3·5	167·2

The average yield of 40 cows for 8 months was 4,024 lb. milk, 154·5 lb. fat, average test 3·8 per cent fat.

In these 6 herds the difference between the best and poorest yield of milk varied from 1,150 lb. to 2,100 lb. between two animals in the same herd during 8 months. Surely this thrusts home the necessity of definite knowledge as to the performance of each cow in the herd.

COMPARISONS FOR 9 MONTHS, 1907.

Average Production of Herds.					Yield of Best Cow in each Herd.				Yield of Poorest Cow in each Herd.			
Herd.	No. of Cows in Herd.	Milk.	Test.	Fat.	Age.	Milk.	Test.	Fat	Age.	Milk.	Test.	Fat.
		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.
A.....	4	4,669	3·5	164·6	4	4,547	4·0	182·6	12	4,640	3·4	159·3
B.....	5	4,980	3·6	178·5	7	5,420	3·7	201·6	10	4,365	3·6	155·9

The average yield of 15 cows for 9 months was 4,802 lb. milk, 3·7 test, 178·3 lb. fat.

HATLEY, QUE., ASSOCIATION.

Average yield of cows tested for 6 months, 1907, 13 cows, 2,782 lb. milk, 3·9 test, 110·2 lb. fat.

COMPARISONS FOR 7 MONTHS. 1907.

Average Production of Herds.					Yield of Best Cow in each Herd.				Yield of Poorest Cow in each Herd.			
Herd.	No. of Cows in Herd.	Milk.	Test.	Fat.	Age.	Milk.	Test.	Fat.	Age.	Milk.	Test.	Fat.
		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.
A	15	2,805	4·0	111·3	6	5,195	3·4	177·1	5	2,120	4·6	96·8
B	4	2,915	4·0	115·7	6	3,130	4·4	138·8	3	1,805	4·3	77·4
C	8	3,374	3·6	122·6	5	4,425	3·5	153·9	5	2,755	3·8	104·1
D	6	3,322	4·5	148·3	7	4,455	3·9	175·7	5	2,675	5·2	138·3
E	4	4,126	3·8	158·6	11	4,740	4·1	193·0	4	2,940	3·4	99·0
F	4	4,433	4·2	188·1	8	5,460	3·9	214·4	9	3,955	3·9	155·3

The average yield of 47 cows for 7 months was 3,291 lb. milk and 130·7 lb. fat, average test, 4·0 per cent fat.

The 5-year-old cow in herd 'A' gave 3,340 lb. milk and 117·6 lb. fat less than the 8-year-old cow in herd 'F'; and all the 15 cows in herd 'A' averaged 1,628 lb. milk and 76·8 lb. fat less than the average of herd 'F.' Had they averaged as well, the owner of herd 'A,' with milk at $1 per 100 lb. would have received in 7 months an additional income of $244.20. Such comparisons should sound the death knell of many poor individual cows, and ring in the day of systematic improvement.

COMPARISONS FOR 8 MONTHS, 1907.

Average Production of Herds.					Yield of Best Cow in each Herd.				Yield of Poorest Cow in each Herd.			
Herd.	No. of Cows in Herd.	Milk.	Test.	Fat.	Age.	Milk.	Test.	Fat.	Age.	Milk.	Test.	Fat.
		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.		Lbs.
A	5	3,778	3·7	140·4	6	4,385	3·5	155·0	10	3,930	2·9	115·6
B	4	3,727	4·0	148·8	7	4,902	3·9	191·3	4	2,752	3·8	105·4
C	4	4,690	4·1	192·5	8	5,005	4·7	238·0	12	3,840	3·4	131·0

The average yield of 19 cows for 8 months was 4,094 lb. milk and 162·5 lb. fat. Average test 4·0.

COMPARISONS FOR 9 MONTHS, 1907.—AVERAGE PRODUCTION OF HERDS.

Herd.	No. of Cows in Herd	Milk.	Average Test.	Fat.
		Lbs.		Lbs.
1	4	3,822	3·8	146·8
2	4	4,251	4·1	176·4
3	4	4,438	4·1	182·9

The average yield of 13 cows for 9 months was 4,186 lb. milk, 4·0 test, 167·4 lb. fat.

ST. ARMAND, QUE., ASSOCIATION.

Six herds, 113 cows, were tested for 12 months in this association.

During this period, 6 of these cows were dry for 5 months, 20 for 4 months, 35 for 3 months, 36 for 2 months, 8 for 1 month and 8 cows were milked during the whole 12 months. Manifestly the milking period is far too short in very many instances.

The average production of these 113 cows for the whole 12 months was 4,375 lb. milk, 4·1 test, 180·4 lb. fat. The best individual yield was 9,265 lb. milk, 3·9 test, 367.2 lb. fat; and the lowest yield was 2,905 lb. milk, 4·3 test, 124·4 lb. fat.

AVERAGE PRODUCTION OF SIX HERDS FOR TWELVE MONTHS.

Herd.	Number of Cows.	Total Milk.	Average Test.	Total Fat.	Value of Production at 25c. per pound of Fat.
		Lbs.		Lbs.	$ cts.
A	22	3,429	4·7	161·4	40 35
B	27	3,754	4·2	168·8	42 20
C	20	4,382	3·9	171·6	42 90
D	7	4,687	4·0	186·5	46 62
E	22	5,136	3·7	190·3	47 57
F	15	5,614	4·0	223·4	55 85

This indicates a difference in the average production of $15.50 per cow between the best and poorest herds. Thus, if the 22 cows in herd 'A' were as good as the average of herd 'F' they would have earned $341 more.

PRODUCTION OF THE BEST COW IN EACH OF THESE SIX HERDS.

Herd.	Milk.	Average Test.	Fat.	Value at 25c. per lb. of Fat.	Age.	Breed.
	Lbs.		Lbs.	$ cts.		
F	9,265	3·9	367·2	91 80	8	Ayrshire.
E	6,645	4·4	297·2	74 30	12	Grade.
B	6,165	4·1	254·8	63 70	8	Guernsey.
C	5,430	4·3	234·9	58 72	5	Grade Ayrshire.
A	4,810	4·8	234·7	58 67	7	Grade Jersey.
D	5,729	4·0	233·0	58 25	7	Grade Ayrshire

Whereas in herd 'F' the 8-year-old produced $91.80 worth of butter fat, in herd 'D' the 7-year-old, again the best cow in that herd be it noted, produced $33.55 worth of butter fat less, or only $58.25 worth.

PRODUCTION OF THE POOREST COW IN EACH OF THE SAME SIX HERDS.

Herd.	Milk.	Average Test.	Fat.	Value at 25c. per lb. of Fat.	Age.	Breed.
	Lbs.		Lbs.	$ cts.		
F	6,232	3·3	205·9	51 42	6	Ayrshire.
D	4,431	4·0	179·3	44 82	5	Grade.
C	3,837	4·0	153·8	38 45	8	Grade Ayrshire.
E	3,680	3·5	128·8	32 20	8	Grade.
B	3,535	3·6	128·3	32 07	14	Grade Guernsey.
A	2,905	4·3	124·4	31 10	5	Grade.

There is a difference of $20.37 between the value of the yields of the poorest cow in herd 'F' and the poorest cow in herd 'A.'

In these six herds the average difference in the value of production between the best and poorest cow in the same herd is $29.20. There is evidently much yet to be done in getting every cow up to a profitable level, even in these good herds.

NOTE.—None but the yields of cows 5 years old, or over, were taken in making the above comparisons.

Some striking instances of the necessity of testing in order to determine the value of a cow as a butter producer, appear in the records of some herds in this association.

Herd No. 8.	Milk.	Average Test.	Fat.
	Lbs.		Lbs.
Cow A	4,175	5·4	227
Cow B	4,370	3·7	164

Thus cow 'B' gave 195 lb. milk more than cow 'A,' but produced 63 lb. fat less.

Herd No. 10.	Milk.	Average Test.	Fat.
	Lbs.		Lbs.
Cow A	6,435	3·5	225·7
Cow B	5,302	4·1	221·2
Cow C	4,370	4·6	200·2
Cow D	5,830	3·6	208·7

Cow 'A' gave 1,132 lb. more milk but only 4·5 lb. more fat than cow 'B.' Cow 'D' produced 1,460 lb. more milk, but only 8·5 lb. more fat than cow 'C.'

Herd No. 15.	Milk.	Average Test.	Fat.
	Lbs.		Lbs.
Cow A	6,230	3·3	206·0
Cow B	5,200	4·2	220·0

In this herd cow 'B,' with 1,030 lb. milk less than cow 'A' produced 14 lb. fat more.

In going over the records of each herd, the usefulness of keeping records as a guide in making intelligent selection, as well as breeding after correct principles, is abundantly demonstrated.

Herd No. 1 averaged 3,427 lb. milk and 161·4 lb. fat. Out of the 22 cows that compose this herd, ten were below the average of 161 lb. fat, eight of them only yielded an average of 2,510 lb. milk and 118·9 lb. fat; there were only two three-year-old heifers among these eight cows, the balance being from 5 to 12 years old. The difference between the best and poorest cow in this herd was 1,905 lb. milk and 110·3 lb. fat, value $27.27.

In herd No. 8 the average production was 3,754 lb. milk, 168·8 lb. fat. The difference between the best and poorest cow was 2,630 lb. milk and 126·5 lb. fat; age of poorest cow, 14 years. Out of the 27 cows, 14 were below the average for the herd; only five were heifers, two or three years old; the balance were all mature cows. The best cow was milked ten months, and the poorest only eight months during the year.

In herd No. 10 the difference between the best and poorest cow was 2,765 lb. milk and 168·4 lb. fat, valued at $42.10.

In herd No. 15, six of the 15 cows which compose this herd were two and three-year-old heifers. The average production for the whole herd was 223·4 lb. fat, and the average for just the six heifers reached the respectable figure of 184·6 lb. fat each.

One illustration of 'weeding out.' In one herd of 22 cows in this association the total value of production at an average of 3,429 lb. milk and 161·4 lb fat per cow, stood at $888.08. Allowing $35 as the average cost of feed, the profit was $118.08. Suppose now, that the poorest eight cows, that averaged only 2,510 lb. milk, 118·9 lb. fat, had been disposed of, leaving only fourteen in the herd, the proposition would have thus resolved itself:—

The same herd, less 8 cull cows—	
Total value of production	$619 50
Cost of feed, 14 cows at $35	490 00
Profit	$129 50

This means that all the labour attendant on the care of 8 cows for one year could have been saved, that $280 worth of feed would have been on hand and that the profit even then would have been eleven dollars more. In these days of scarcity of efficient help on the farm this should appeal to every owner of a herd. In this particular case the 8 cows were all of mature age, and the 14 proposed to be left included 3 heifers, capable of development, but which stood below the average yield. These figures are commended to the earnest thought, and application, of all dairy farmers.

ST. EDWIDGE, QUE., ASSOCIATION.

Thirty-three cows in 7 different herds were tested for 6 months with an average yield of 3,494 lb. milk, 3·8 test, 133 lb. fat.

Valuing fat at 25 cents per lb., the return per herd varied from $23.38 to $46.98. This is another illustration of two cows being kept to do the work that should be done, and is done, by one cow.

Fifty-seven cows in 11 herds were recorded for 7 months, and gave an average of 3,680 lb. milk at 3·9 test, 143·4 lb. fat.

Taking butter fat again at 25 cents per lb., 3 cows composing one herd returned $50.70 each from 202·8 lb. fat, while 4 cows in an adjoining herd gave only $26.58 each from 106·3 lb. fat in the same time. This was a difference of $24.12, or $3.44 per month. Are there not hundreds more of such herds and individual cows that should be giving over $3 a month more?

Twenty-seven cows were tested for 8 months, the individual yields running from 2,090 lb. milk, 4·7 test, 99·4 lb. fat. up to 6,320 lb. milk, 3·7 test, 235·8 lb. fat.

Four cows tested 10 months averaged 4,889 lb. milk, 3·8 test, 187·7 lb. fat.

Twenty cows in 3 herds were tested for the entire 12 months with an average yield of 4,496 lb. milk, 3·9 test, 176·4 lb. fat. Detailed comparisons are given below.

AVERAGE PRODUCTION OF THREE HERDS, TWELVE MONTHS.

Herd No.	Number of Cows.	Milk.	Average Test.	Fat.	Value at 25c. per lb.
		Lbs.		Lbs.	$ cts.
16	10	5,058	3·9	195·6	48 90
18	4	3,074	4·0	122·8	30 70
32	6	4,508	4·0	180·4	45 10

PRODUCTION OF BEST COW IN EACH HERD.

Herd No.	Age of Cow.	Milk.	Average Test.	Fat.	Value at 25c. per lb.
		Lbs.		Lbs.	$ cts.
16	3	6,370	3·7	240·0	60 00
18	10	3,950	3·7	148·0	37 00
32	13	5,605	4·3	244·5	61 12

PRODUCTION OF POOREST COW IN EACH HERD.

Herd No.	Age of Cow.	Milk.	Average Test.	Fat.	Value at 25c. per lb.
		Lbs.		Lbs.	$ cts.
16	3	3,828	3·7	141·0	35 25
18	5	2,294	4·4	102·5	25 63
32	13	4,660	3·6	167·2	41 80

From the above tables it will be seen that the cows in herd 16 gave almost 2,000 lb. of milk per cow more for all of the 10 cows than did the 4 cows in herd 18.

In herd 32 the best cow gave 945 lb. milk and 77·3 lb. fat more than the poorest cow, or a difference in cash value of $19.32. Both of these two cows were 13 years old. Questions of age, breed, conformation to type, may all well be sunk in the more pertinent inquiry as to actual performance. Ability to produce has to be secured.

COWANSVILLE, QUE., ASSOCIATION.

Twenty-four cows tested for 6 months averaged 2,961 lb. milk, 3·9 test, 115 lb. fat. The best cow in one herd gave 3,630 lb. milk, 4·1 test, 150·0 lb. fat, which valued

at 25 cents per lb. equals $37.50. The poorest cow in the same herd, a 5-year-old, calved in April, gave only 1,850 lb. milk, 5·0 test, 92·0 lb. fat, which at the same valuation equals $23, or $14.50 less return than the other cow in 6 months.

Nineteen cows were tested for 7 months and averaged 3,689 lb. milk, 3·9 test, 144·8 lb. fat. Again taking fat at 25 cents per lb., the best cow in one herd earned $15.70 more than the poorest in the 7 months.

Twenty-eight cows tested for 8 months averaged 4,591 lb. milk, 4·0 test, 185·9 lb. fat. One herd averaged 4,706 lb. milk, 4·0 test, 189·1 lb. fat. The highest yield of any one cow was 6,300 lb. milk, 3·9 test, 247 lb. fat, age 9, calved February 1st. The lowest yield was 3,530 lb. milk, 4·4 test, 154 lb. fat, age 4, calved March, or a difference of 2,770 lb. milk and 93 lb. fat in 8 months.

Fifteen cows were tested 9 months, and averaged 4,281 lb. milk, 4·3 test, 183·5 lb. fat.

The poorest herd averaged 2,782 lb. milk, 3·9 test, 109 lb. fat, while the best herd averaged 5,332 lb. milk, 4·1 test, 220·4 lb. fat. Valuing fat at 25 cents per lb., the one herd earned $34.25 per cow, while the other herd returned $62.75 per cow in the same period. Such differences indicate the imperative necessity of determining the production of each cow. There is no surer method than systematic weighing and testing.

Fourteen cows tested 10 months averaged 5,395 lb. milk, 4·7 test, 254·6 lb. fat. In the herd with the poorest average of 2,778 lb. milk, 4·0 test, 112·2 lb. fat, the best yield of any one cow was 3,480 lb. milk, 4·0 test, 141·3 lb. fat. A happy contrast to this, the best herd of 8 cows averaged 6,491 lb. milk, 4·8 test, 313·6 lb. fat, or practically three times as much, and the best cow in this herd gave 8,845 lb. milk, 4·8 test, 424·6 lb. fat, virtually four times as much fat as the best cow in the first mentioned herd. Is it not time, high time, for improvement?

For the full 12 months 34 cows in three herds gave an average yield of 5,620 lb. milk, 4·7 test, 264 lb. fat.

The old saying that 'extremes meet' is once more exemplified here. To illustrate: the best herd, one of 20 cows, included in this lot of 34, had an average yield of 6,593 lb. milk, 4·8 test, 319·8 lb. fat; but the neighbouring and the poorest herd, one of 7 cows, gave only 2,780 lb. milk, 4·0 test, 111 lb. fat, practically only one-third as much.

As a further contrast, the best individual record in each of the three herds should be noticed.

YIELD OF THE BEST COW IN THREE HERDS, TWELVE MONTHS.

Herd.	Milk.	Average Test.	Fat.	Value at 25c. per lb. of Fat.
	Lbs.		Lbs.	$ cts.
A	9,545	4·7	450·8	112 70
B	7,100	4·3	303·6	75 90
C	3,480	4·2	141·3	35 32

The highly satisfactory totals credited to the best cow in herd 'A,' and to the herd of 20 cows, as noted above, are a magnificent tribute to the brains, pluck and perseverance of this herd's owner. These results illustrate in tangible form how a man is rewarded for liberal feeding, wise selection of good grades through the medium of the scales and the Babcock test, and the use of a good dairy sire.

Last year's feed averaged $45 per cow in this herd, but the return from the best cow was $112.70, or 60 per cent on the investment. Calculating feed at any reasonable price, what was the return on the investment in the best cow of herd 'C'?

REPORT

OF THE

DAIRY AND COLD STORAGE COMMISSIONER

FOR THE

FISCAL YEAR ENDING MARCH 31

1908

PART II.—REPORT OF THE ASSISTANT DAIRY COMMISSIONER.

TABLE OF CONTENTS.

Summary of Work—Visits and Lectures—Provincial Conventions—Fruit Tree Survey—St. Hyacinthe Dairy School—Inspection of Factory Syndicates.

PART II.—REPORT OF THE ASSISTANT DAIRY COMMISSIONER.

St. Denis (en bas), County of Kamouraska, P.Q., March 31, 1908.

Mr. J. A. Ruddick,
Dairy and Cold Storage Commissioner,
Ottawa.

Sir,—I beg leave to present you my eighteenth report as Assistant Dairy Commissioner, which covers a period of twelve months beginning April 1, 1907, and ending on this date.

SUMMARY OF MY WORK.

During the last twelve months I have devoted all my time to the province of Quebec, and have made, in all, 139 visits to 86 localities in 31 counties. I have delivered 237 lectures before 13,532 persons, 445 of whom were cheese or butter makers. Exclusive of the lectures delivered before the students of the provincial dairy school at St. Hyacinthe, Que., the average attendance at those lectures was 62 persons. Of the 86 localities I visited 25 for the first time in my capacity as Assistant Dairy Commissioner. In performing my work I have travelled 5,858 miles.

The following is a list of the counties and localities in which I have delivered lectures, with reference letters indicating the purpose of the meetings.

TABLE OF VISITS AND LECTURES.

PROVINCE OF QUEBEC.

Counties.	Localities.	Visits.	Lectures.	Reference Letters.
Beauce	Sacré Cœur de Jesus	1	1	c
	St. Elzéar	1	1	c
	St. Frédéric	1	1	c
	St. Joseph	1	2	h
	St. Séverin	1	1	c
	Ste. Marie	3	5	c, h
	Saints Anges	4	8	h
Berthier	Berthierville	1	1	b
Charlevoix	Malbaie	1	2	b, d
Compton	Chesham	1	1	c
	Emberton	1	1	c
	La Patrie	1	1	c
	Megantic	1	1	c
	Piopolis	1	1	c
	St. Léon	2	1	c, h
	Scotstown	1	1	c
Dorchester	Cranbourne	3	6	h
	Frampton	7	14	h
	"		2	f
	"	1	1	b
	St. Léon de Stanton	5	10	h
	St. Malachie	4	8	h
	"		2	f
	Ste. Claire	1	2	h
	Ste. Germaine	1	2	h
	Ste. Marguerite	1	2	h
Jacques Cartier	Ste. Anne de Bellevue	1	2	a, f
Joliette	St. Ambroise	1	1	b
	St. Paul	1	1	b
	Ste. Elizabeth	1	1	b
Kamouraska	St. Denis	1	1	c

Counties.	Localities.	Visits.	Lectures.	Reference Letters.
Lake St. John	Roberval	1	1	b, g
	"	1		h
L'Assomption	L'Assomption	1	1	b
	L'Epiphanie	1	1	b
Lévis	St. Nicolas	1	1	c
L'Islet	St. Jean Port Joli	1	3	a, b
	Village des Aulnaies	1		a
Lotbiniere	St. Jean des Chaillons	1	1	c
	Ste. Philomene	1	1	c
Maskinongé	Louisville	3	6	h
	"	1	1	b
	Maskinongé	4	8	h
	St. Alexis	2	4	h
	St. Justin	2	4	h
	St. Léon	6	12	h
	St. Paulin	3	6	h
	Ste. Ursule	3	6	h
Matane	Amqui	2	1	d, h
Mégantic	St. Cœur de Marie	2	2	c, h
Montcalm	St. Alexis	1	1	b
	St. Esprit	1	1	b
	St. Jacques	1	2	b
	Ste. Julienne	1	2	b
	Ste. Marie Salomée	1	1	b
Montmagny	Berthier	1	1	c
Nicolet	Gentilly	2	1	c, h
Richelieu	St. Joseph de Sorel	1	1	d
	Ste. Anne de Sorel	3	1	c, h
Richmond	Bromptonville	1	1	c
	St. Claude	1	1	d
	St. Francois-Xavier de Brompton	1	1	c
	Stoke Centre	1	1	c
	Windsor Mills	1	1	c
Rimouski	St. Mathieu	1	2	h
	St. Simon	1	2	h
Rouville	Marieville	1	2	b
	St. Césaire	1	2	b
St. Hyacinthe	St. Hyacinthe	2	20	a, e
	" Inspectors	1	1	a, e
	" "		1	a, e, f
St. John	Lacolle	2	1	d, h
St. Maurice	Yamachiche	1	2	h
Sherbrooke	St. Elie d'Orford	1	1	c
Stanstead	Stanstead	1	1	b, g
Témiscouata	Cacouna	1	2	h
	Isle Verte	2	4	h
	Riviere du Loup	1	2	h
	St. Antoine	1	2	h
	St. Arsene	1	2	h
	St. Clement	1	2	h
	St. Cyprien	2	4	h
	St Eloi		2	h
	St. Epiphane	1	2	h
	St. Hubert	1	2	h
	St. Jean de Dieu	2	4	h
	St. Paul de la Croix	2	2	h
	Trois Pistoles	2	4	h
Three Rivers	Three Rivers	2	2	a, h
	"	1	2	a
Two Mountains	St. Eustache	1	2	b
	St. Scholastique	1	2	b

Reference letters indicate:—(a) Provincial conventions; (b) county and district conventions; (c) farmers' club meetings; (d) parish meetings; (e) St. Hyacinthe Dairy School; (f) English lectures; (g) visits to schools; (h) factory inspections and lectures.

The foregoing table shows that I have delivered (*a*) nine lectures at provincial conventions, not including the provincial courses at the St. Hyacinthe Dairy School; (*b*) twenty-eight at county and district conventions; (*c*) twenty-six at farmers' club meetings; (*d*) five at parish meetings; (*e*) twenty-two to the students at the St. Hyacinthe Dairy School; (*f*) seven in English; (*g*) two in schools of domestic science, and that I have made eighty-two factory inspections, in the course of which I have delivered 152 lectures to the factory patrons.

PROVINCIAL CONVENTIONS.

The first of the provincial conventions I attended during the last twelve months was the annual spring meeting of the Province of Quebec Syndicate Inspectors, held

at the St. Hyacinthe Dairy School on April 24th. There were 70 inspectors present. I delivered two lectures to them, one in French and one in English, on the necessity for them to qualify as instructors as well as inspectors and to fit themselves for delivering lectures before the patrons of the factories which are under their control. Dairy farming, cattle raising, care and feeding, the care of milk, milk testing, &c., are so many subjects with which they should make themselves familiar so as to teach them to the patrons. My address on that topic included a programme of the lectures they should prepare themselves to deliver. This would enable our federal and local departments of agriculture to utilize their services as lecturers at farmers' institutes and club meetings, in winter time, when their work as inspectors is not required. A few of them are at present doing useful work in that line.

The second provincial convention I attended was the annual meeting of the Agricultural Missionaries of the Province of Quebec, held at Three Rivers on July 16 and 17, in the college buildings. I prepared and delivered at that convention a lecture on 'Theory vs. Practice in Agriculture,' of which the following is a short summary:—

Theory is the exposition of principles governing an art or a science; practice is the application of these principles to the art or science to which they pertain. According to this definition, no theory about a fact is correct that does not lead to a correct application of the principles pertaining to that fact. In agriculture it is a most important thing for the farmers to accept no theory that in its application conflicts with facts. The great variety of climate we have in the province of Quebec, in which there are three sections each differing considerably from the others in climatic conditions, implies that many good theories which can be applied in one of these sections cannot be applied successfully in the other two. One of these districts is the Lake St. John and Saguenay region; another extends from the city of Quebec along the south shore of the St. Lawrence river to the eastern extremity of the province; and the third one comprises the rest of the province, west of Quebec city.

These climatic divisions being taken into consideration, we find that as to the cultivation of the soil, the selection of plants to grow, the raising of cattle for various purposes, the practice of horticulture, &c., many theories that are excellent in their application in the western part of the province are not so when applied in the eastern and northern sections. This has been the cause of much disappointment in the past to those who, wishing to apply principles considered good in the every-day practice of the western farms, on the farms in the eastern and northern districts, have been unsuccessful. Hence has arisen a feeling of diffidence towards what is called 'book farming,' taught in the courses of the western agricultural colleges of the United States and Ontario.

If we wish to cope successfully with the false position now taken by our farmers in the province of Quebec, we must first find out and then teach them what they can do under the adverse circumstances they must encounter. Can we do that by having only one big agricultural college in the west of the province for the whole province? Assuredly not. First, their prejudice will prevent them from going there. Second, they are not at all prepared to take the courses given in such colleges. Even in the States they have found that it is absolutely necessary to have secondary agricultural schools to prepare the students to take advantage of the higher courses in agriculture.

Then, what we have to do, and that as soon as possible, is to have three of those secondary agricultural schools in the three sections of our province above mentioned. Two are already in existence, one at Oka, Two Mountains county, for the west, and another at Ste. Anne de la Pocatière, Kamouraska county, for the east. Let us have a third one at Lake St. John for the north and then we shall have a good foundation for a first-class agricultural education for all our farmer boys, who in a few years will be numerous enough to warrant the establishment of a big central college where they may go to obtain the highest class of agricultural knowledge. May our

economists take hold of this idea and bring about its solution as soon as possible, and we shall soon see the production of our land more than doubly increased.

At the same convention I took part in an important discussion on fertilizers.

The summer convention of the Quebec Pomological Society was the third provincial gathering I attended. It was held at St. Jean Port Joli and Village des Aulnaies, L'Islet county, on September 24 and 25. The semi-annual fruit exhibition of the L'Islet Horticultural Society was held on the 24th, and I was appointed a judge for that exhibition. I also delivered at the convention the following lecture on

PULP WOOD AND DEFORESTATION BELOW QUEBEC.

'We hope that, though we are the first to bring the subject of forestry before this association, we shall not incur the displeasure of any of the members. We do it because we wish to speak of a forestry question which is of the greatest importance to the section of our province in which we are holding this convention. This question is the wholesale deforestation of our district, for the production of pulp wood.

'Everybody knows how detrimental wholesale deforestation is to the distribution of water, to regular rainfall, to the normal conditions of climate and to the value of cultivated lands. By wholesale deforestation we mean completely clearing the land of all the trees that cover it. When the forest is dense it is seldom we see that complete denudation, but when it takes place it hastens the melting of the snow in the spring and brings a great quantity of water all at once into the rivers, which overflow and cause great damage in the districts through which they run. That water, which in the forest would ooze slowly through the humus and roots contained in the soil and constitute a reserve which would flow slowly down the mountain slopes all summer, is carried away in a few days instead of a few months, and the rivers are left dry during summer. Thus land and animals, as well as people, are deprived of water which they imperatively need, and the decrease in evaporation causes long periods of drought and such a change in the climate that agriculture and all concerned in it suffer greatly. Let us remember, too, that it lessens very much the value of the cultivated lands in the vicinity of the destroyed forest, which can supply no more fuel nor timber to the owners of those lands, for their use.

'Now, the conditions brought about by wholesale deforestation will before long obtain in eastern Quebec, owing to the fact that the owners of the land, after having cut many of the trees for timber, lumber and firewood, are now making a complete clearing of all the soft wood fit for pulp. Every year great numbers of trees, some as small as three inches in diameter, are cut for this purpose, and soon there will be no more wood, even for fuel, in the Alleghany district.

'We know localities on the shores of the St. Lawrence river where there is so little maple or black birch for firewood that we have to pay $5 a cord for it, and where we shall soon have no more spruce. As things stand now, those kinds of wood cost, ready for the stove, $5 and 3 a cord, respectively, to those who pay to have it drawn home from the forest, and there is so little of them that we may say that in some localities, in ten years from now, all that is available will have disappeared.

'Is there any way to check that systematic wholesale deforestation? This is the question we wish you to discuss with us, gentlemen. We know that our forests are one of the best of our national resources; that their exploitation is one of the great sources of revenue; that we still have very large areas of our province so completely covered with forest that with a systematic exploitation, by the parcelling-out method, we can obtain a large quantity of wood every year from them without destroying the forest itself. We know also that in those parts of our province where the forest will disappear on account of the devastation now going on so extensively, through lack of foresight on the part of its owners, we shall suffer all the disadvantages met with by those who, in older countries, have made the same mistakes.

'Of course, we recognize that it is a very difficult question to deal with. We cannot compel land owners by law to stop making pulpwood on their own property. We understand that it is a very great temptation for a man to know he can get $6 for a cord of spruce, and it always induces him to cut that cord of wood. What, then, can we do? But, first of all, let us try to find out if anything can be done.

'As to ourselves, we think that our society should communicate with the Canadian Forestry Association and ask it to consider thoroughly, at its next convention, the question of deforestation in the long settled sections of the Dominion and especially in our relatively old province, which was the first in Canada to be settled. After having given its attention to the question it could issue a bulletin, in French as well as English, dealing with it fully. The association would in that way try to convince the farmers that the forest is an asset entrusted to us by God, so that we may use it as a source of revenue, but that we must accumulate rather than squander, by practising economy, which is a moral duty; for, as we benefit by the savings of those who have lived before us, so those who will come after us will have the right to benefit by our own savings. The bulletin should also show the cost of the stupendous work of reforestation that other countries have been obliged to do in order to repair the great damage done by deforestation.

'Such a bulletin, distributed amongst the population, should have the same educational effect on the people as we hope will result from the dissemination of bulletins and tracts for the purpose of checking tuberculosis or intemperance.

'We hope, gentlemen, that whatever may be your opinion as to the means of checking the evil pointed out in this paper, you are unanimous in looking upon it, as we do, as one which calls for a prompt consideration of the means of remedying it. Further, we beg leave to suggest that after our discussion of this question—if there is any, as we hope there will be—our committee on resolutions should draft a summary of our suggestions, to be sent as a resolution adopted by this convention to the secretary of the Canadian Forestry Association.'

The second day of the convention was spent at Village des Aulnaies, nine miles from St. Jean Port Joli, where Mr. Albert Verreault's nursery and the residence of Mr. Auguste Dupuis, the president of the Pomological Society, whose guests we were, are situated.

The winter convention of the Pomological Society was held at Ste. Anne de Bellevue on December 18 and 19. The directors of the society were the guests of the Macdonald College, having accepted the kind invitation of Dr. James W. Robertson, principal of that institution. This was the fourth provincial convention I attended. Besides interpreting in English two French lectures written by members of the society for that convention, I delivered the following address on:

TREE SURGERY.

The paper I am going to read may seem to have a queer title. Surgery is an art which applies more to men and beasts than to trees, if we take it in the general acceptation of the word; but, as you will readily see in listening to the development of my subject, the word 'surgery' is much better than any other to qualify the kind of operations I am going to describe, for the preservation of ornamental and fruit trees.

First I must say that my paper has been written less for the benefit of owners of large orchards covering acres and acres of land, or of forest-like parks, than for those owning small orchards of one or two acres in extent, or a few ornamental trees around their house and farm buildings. The owner of a large orchard or park can without much detriment suffer the loss of a few trees through the action of heavy falls of snow, the violence of stormy winds, or the overbearing of fruit; and it would not be practicable for him to undertake the restoration of a large number of broken trees, on account of the high cost of the operation. On the contrary, a man owning a small orchard, or a village lot surrounded by ornamental trees, has great interest in keeping

all his trees in the best of condition, and cannot afford to lose a fine tree about fifteen or twenty years old, occupying a prominent place on his small holding, especially if there is any way of saving it.

I beg you to bear in mind that I am not referring at all to pruning when I speak of surgical operations to be performed on damaged trees. To nip off a new shoot, to cut out a small branch with the pruning knife, to shorten a young limb with the pruning shears, to remove a large branch with the pruning saw, all this means pruning; but to preserve two branches torn asunder by the splitting of the crutch of the tree, where they were united, to straighten bent or broken limbs, to set upright a branch growing crooked from the trunk, that is what I call tree surgery.

The tree surgeon should have a good and complete set of instruments to perform his operation, viz.: a hatchet, a hammer, a saw, a chisel, a monkey wrench, a brace with an assorted set of bits, two or three gimlets of various sizes, a piercer; then he should have in readiness a good assortment of bolts of all sizes, from 8 inches to ½ inch, with nuts and washers, assorted wire nails from 12d to 3d, i.e., from 3 inches to 1 inch, some galvanized wire of 8, 10, 12 and 14 gauge, an assortment of hardwood splints of various sizes, strips of cotton 2 and 3 inches wide, grafting wax, &c.

There are three special classes of surgical operations to be performed on trees in order to preserve their limbs and their shape. Sometimes, as has been mentioned above, a tree is split in the first crutch, from where the larger limbs branch off. This happens most often in winter, after a heavy fall of snow, and the damage thus caused is noticed only in the spring. There are two ways of dealing with such an accident. If the tree is rather small, cut clean with the chisel all the inside splinters so as to obtain a smooth, adhering surface, taking good care not to touch the bark; tie the branches together with a rope so as to join the two split parts; drive through both a wire nail long enough to protrude; carefully clinch the point of the nail; put on a good application of grafting wax, so as to prevent the entrance of water, air and insects; wrap the united parts with strips of cotton wound round and overlapping; then take off the rope, and after two seasons of growth take away the cotton if it is still there.

With big trees, the operation is a little different. The first part is performed as described above, but, when the branches are to be tied with a rope in order to join them together, you may have to raise them by putting a piece of board under them while some one else lifts them up. Then you proceed to make a hole with the brace and bit, and instead of a nail you use a bolt and nut long enough to fit the diameter of both branches united. Always use washers with the bolts. Then you continue and finish the operation as in the first case.

Sometimes you may have to deal with what I call the second class of operations. These are performed on branches that have been bent down and kept so bent, either by the weight of snow on the limbs or by overbearing of fruit. If the injury has been caused by the presence of snow, as soon as the ground is bare and there is no more frost in the limbs, have somebody lift the branch for you and straighten it up. Sometimes you will find that the bend is so sharp that the branch is half broken, but do not get discouraged at that. Straighten it with great care and take away the splinters, if there are any, so as to get a close union of the broken parts. Take a splint of hardwood about 1 inch wide, ½ inch thick and 2 feet long, as stiff as possible; apply it to the bent or broken branch, on the outside of the bent part; tie the two ends of the splint to the branch with a rope, in order to make it adhere tightly. Then use the brace and bit to make a hole at each end of the splint and through the branch, and bore a similar one in the middle of the splint. Insert three bolts of a size suiting the diameter of the branch, tighten them with the nut and take off the rope. If the bent branch thus repaired is broken, put some grafting wax on that part, wrap it with strips of cotton, taking in the splint and branch together, and everything will be O.K.

The third class of operations the tree surgeon may have to perform necessitates the use of the pruning saw and of some wire. This happens in the case of stout

branches or limbs which have been bent under the weight of a heavy crop of fruit and which have remained so bent during the whole summer, till the gathering of the fall fruit. In such cases wood growth on the bent limbs has taken place for at least three months and it is absolutely impossible to straighten such a branch without running the risk of breaking it. I shall indicate a sure method of performing the operation without injuring the limb. For about two feet on the outside of the sharpest part of the bend, make with the pruning saw, half way through the wood of the branch, saw-cuts at intervals of half an inch, taking good care before beginning to place a support under the branch to prevent it from splitting during the operation. After the branch is so cut, tie it with a rope to a sound branch while some one else straightens it up. It yields readily to the pressure from below and the narrow gaps left by the saw-cuts are filled up. When the branches are well straightened, make with the brace and bit, or gimlet, a hole in each of the straightened limbs at a height of about two feet above the part where the operation has been performed. Pass through each of the holes a wire of a gauge or strength corresponding to the weight of the branch, and clinch it on the outside of each branch so that it may hold the branches together tightly. Then apply a dressing of grafting wax and cotton strips, as mentioned for the other classes of operations, and in two seasons of growth all will be healed.

I have practised the three classes of operations on many trees in my own orchard for many years, and always with the best of success. I have trees with as many as fourteen bolts in their branches, not one of them to be seen now, because they are covered with the growth of new wood. Of course it may happen that in future years, when such trees are old and replaced by new ones, somebody may find, when splitting the old trunks for firewood, some hard knots to crack, but this is of no consequence to the man who wishes to save a valuable tree from destruction. Those trees are all healthy and good looking and bear abundant crops of valuable fruit.

I wish to add a word of caution to what I have already said on this subject. Never use a wire or a tie of any kind *around* the branches or trunk of a tree when it is to remain more than one season on the tree. Always pass it *through* the branch or trunk, never around it.

I have given you my experience in that matter because I have seen so many people wondering how a tree may stand such treatment and still live and bear fruit. As some of the operations above mentioned may seem a little extraordinary, I am glad to have here Mr. Raynaud, the able nurseryman of the reverend Trappist Fathers of Oka, who, from what he has seen at my place, can testify to the success obtained with such methods of saving trees.

On February 4th and 5th I attended the twenty-sixth annual convention of the Dairymen's Association of the province of Quebec, at Three Rivers, and delivered a lecture on foreign work in dairying.

I classify as having the character of provincial conventions the courses of lectures which I delivered to the students of the St. Hyacinthe Dairy School.

COUNTY AND DISTRICT CONVENTIONS.

I have delivered, during the last twelve months, twenty-eight lectures before county and district conventions.

Twenty-one of those lectures were delivered last winter in a series of farmers' institute meetings held between February 26 and March 13, in the counties of Two Mountains, L'Assomption, Montcalm, Joliette, Berthier and Rouville. I was accompanied on that trip by Mr. Félix Charlan, specialist in tobacco culture, of the Department of Agriculture, Ottawa, and Mr. Victor Fortier, assistant poultry manager of the Central Experimental Farm, Ottawa.

This series of lectures was held in localities where the farmers devote much attention to tobacco culture, and Mr. Charlan and I were sent with special instructions

to speak more on that subject than on any other. The subjects treated by Mr. Charlan were: 'Tobacco Culture,' 'Selection of Varieties,' and 'Special Method of Production of Tobacco Seed.'

Mr. Fortier spoke on 'The Importance of Poultry Raising on the Farm,' 'The Cold Poultry House,' and 'Statistics on Poultry and Eggs.'

As to myself, I addressed the farmers on 'A Special System of Rotation for Tobacco Culture,' and when we had two meetings in the same locality I gave a general lecture on dairy husbandry. In my address on a rotation for tobacco I advocated a three-year rotation: first year, tobacco; second year, a grain crop, especially barley if possible, with clover seed; third year, clover crop.

I am glad to be able to say that during the trip I saw plenty of evidence of the progress farmers have made in tobacco culture and poultry raising, by following the advice given in the last two years by Messrs. Charlan and Fortier. The tobacco crop has in many places increased from 1,000 to 1,500 lb. to the acre, and I have visited many cold poultry houses giving much profit to their owners by the production of eggs in winter.

The following condensed table contains a few notes on the localities visited, the meetings held, the number of farmers present and the success of the series.

Counties.	Localities.	Date.	First meeting attendance.	Second meeting attendance.	Remarks.
Two Mountains	St. Scholastique ..	Feb. 27..	225	100	Very good meetings, attended by farmers eager to get information. Many samples of tobacco exhibited.
"	St. Eustache.....	" 28..	25	20	Very poor attendance and little interest shown.
Assomption....	L'Assomption....	" 29..	125	.....	The audience was composed of the very best farmers of the locality.
" .... *	L'Epiphane.....	" 29..	75	.....	Much attention was paid to the three lectures.
Montcalm.....	Ste. Julienne.....	Mar. 3..	200	15	The afternoon meeting was attended by a good class of general farmers, but we had only 15 in the evening, these being all the first class tobacco growers of the vicinity.
"	St. Esprit.....	" 4..	200	.....	These two meetings were composed of farmers much interested in tobacco growing, poultry raising and dairying.
"	St. Alexis.....	" 4..	200	.....	
"	St. Jacques.....	" 5..	300	250	These meetings were the largest of the series. We saw here the finest tobacco and the best cold poultry houses.
Joliette.....	Ste.Marie Salomée	Mar. 6..	100	.....	The farmers we met at these two meetings seemed to be anxious to develop tobacco-growing in their localities.
"	St. Paul.....	" 6..	80	.....	
Berthier.....	Berthierville.....	" 7..	225	.....	There are only a few farmers interested in tobacco-growing, but one of them is the largest grower in the whole district. Poultry raising and dairying have many enthusiastic adepts.
Joliette.....	St. Ambroise.....	" 9..	200	.....	A good locality for tobacco-growing, which seems to be developing.
"	Ste. Elizabeth....	" 10..	100	.....	" "
Rouville	St. Césaire.....	" 11..	125	125	It is in these two parishes that the best success has been obtained by following Mr. Charlan's method.
"	Marieville.....	" 12..	100	.....	

*We were to hold two meetings at St. Liguori, Montcalm county, on March 2nd, but we were prevented from holding them by a violent snow storm which stopped all communication for that day.

Besides the twenty-one lectures given at county and district conventions mentioned above, I attended two other county meetings, one at Louiseville, Maskinongé

county, and another at Frampton, Dorchester county. I attended the former to meet the buttermakers of Maskinongé county, with Mr. J. D. Leclair, inspector general of creamery syndicates of the province of Quebec. I attended the second one with Mr. J. A. Plamondon, assistant inspector general of cheese factory syndicates, for the purpose of meeting the cheesemakers of Dorchester county.

I was also invited to visit the Roberval Domestic Science School of the Reverend Ursuline Sisters, at Lake St. John, on the occasion of the 25th anniversary of the foundation of that school, which was celebrated on August 1, 1907, and to visit the Stanstead Domestic Science School of the Reverend Ursuline Sisters, which is a relatively new institution. On those two visits I developed the ideas expressed in a lecture on 'Schools of Domestic Science,' which I summarized in my last report.

The three remaining lectures at county meetings were delivered at Malbaie, Charlevoix county, and at St. Jean Port Joli, L'Islet county.

LECTURES BEFORE FARMERS' CLUBS.

I delivered twenty-six lectures before farmers' clubs, of which there are now nearly 600 in the province of Quebec. The lectures dealt with the following subjects: 'Bacon Production,' 'Selection of Milch Cows,' 'Co-operation amongst Farmers,' 'Cow Testing Associations,' 'Sheep Raising,' 'Economy in Agriculture,' 'Improvements in Dairying,' and 'Seeds.' Synopses of these lectures are contained in my previous reports.

LECTURES AT PARISH MEETINGS.

In seven parishes where there are no farmers' clubs I delivered addresses on 'Economy in Agriculture' and 'Improvements in Dairying,' and one on the benefits of farmers' clubs.

ST. HYACINTHE DAIRY SCHOOL.

On account of a change in the management of the St. Hyacinthe Dairy School, I attended only two courses and the annual spring meeting of the syndicate inspectors there during the last twelve months.

INSPECTION OF FACTORY SYNDICATES.

I made a complete inspection of all the factories in three syndicates, two composed of cheese factories and one of creameries.

In inspecting the creamery syndicate of Mr. Henry Bouchard, in Maskinongé and St. Maurice counties, I visited 24 factories, met 838 patrons and delivered 48 lectures in 8 parishes.

My second inspection was made in the cheese factory syndicate of Mr. L. E. Faucher, in Beauce and Dorchester counties. I inspected 29 factories there, met 728 patrons and delivered 56 lectures in 10 parishes.

In the cheese factory syndicate of Mr. Elzéar Dumas, in Témiscouata and Rimouski counties, I inspected 19 factories, met 1,178 patrons and delivered 38 lectures in 15 parishes.

Summing up the work of those inspections I find that I travelled 1,012 miles, inspected 72 factories and delivered 150 lectures in 39 days, in 6 counties and 33 parishes.

In the course of the inspections I distributed among the factory patrons 3,000 copies of our bulletin No. 12, on 'Cow Testing Associations,' after lecturing on that subject.

OFFICE WORK.

Though most of my time is devoted to travelling for lecture and inspection work, yet I have to spend some of it in my office attending to correspondence, the preparation of lectures, the writing of articles for the agricultural press and the reading and classification of the numerous papers, reviews and bulletins coming from various sources. Inquiries on various topics come from many quarters, very often on subjects not at all related to dairying, and especially on fruit growing.

With these last remarks I beg leave to close the eighteenth annual report of my work as assistant dairy commissioner.

I have the honour to be, sir,

Your obedient servant,

J. C. CHAPAIS,

Assistant Dairy Commissioner.

REPORT

OF THE

DAIRY AND COLD STORAGE COMMISSIONER

FOR THE

FISCAL YEAR ENDING MARCH 31

1908

PART III.—FRUIT DIVISION.

TABLE OF CONTENTS.

The Staff—Fruit Inspection—Prosecutions—Convictions under the Fruit Marks Act —Fruit Crop Reports—Fruit Districts—Meetings—Correspondence re administration of Fruit Marks Act.

PART III.—FRUIT DIVISION.

Ottawa, March 31, 1908.

Mr. J. A. Ruddick,
Dairy and Cold Storage Commissioner,
Ottawa.

Sir,—I have the honour to submit a report of the Fruit Division for the year ending March 31, 1908.

THE STAFF.

The staff consists of nine permanent inspectors and nine temporary inspectors.

A change was made in the method of inspection in the province of Nova Scotia. In former years most of the inspection, during the shipping season, was made on the docks at Halifax. Owing to the fact that the carloads of apples are not taken down to the freight sheds until the ship is ready to receive the fruit, no proper opportunity for examining the fruit was given to the inspectors. Their work was confined to the short time which it took the combined force of longshoremen to load five or six carloads of fruit. This gave the inspectors only about an hour, and sometimes less, for the work of their examination, which was quite inadequate.

Fortunately, the mode of packing the fruit has changed somewhat among the fruit growers. The practice is becoming more common of gathering the fruit into fruit houses and re-packing there into export packages, which are then loaded directly on the cars. The packing warehouses, therefore, become a convenient place in which the inspectors can examine the fruit after it has been marked and graded, and before it is loaded on the cars. In this way the work of inspection can be done with some thoroughness and with advantage to both packers and inspectors.

The apples of Ontario are orchard packed until about the first or middle of November; after that they are gathered into warehouses and repacked for export.

The plan was tried this year, in a limited way, of examining fruit in orchards over the district from Toronto to Belleville. Mr. W. W. Brown was detailed to work within these limits, not confining himself specially to orchard packing but including as well carload lots ready for shipping at the stations. By this method fewer examinations can be made, but there are compensating advantages that would very strongly recommend the extension of this system. The presence of an inspector in a district has a salutary effect. Packers who lack experience in grading have an opportunity of meeting an inspector who can give them definite instructions with reference to grading, and thus help materially to establish uniformity in the grades.

THE PECULIAR DIFFICULTIES OF THE SEASON.

The season of 1907 was, in many respects, a remarkable one in the apple industry. The spring was very late. During the months of July and August and the first part of September, very little rain fell. As a consequence of the late spring and the midsummer drought, the apples, prior to the ripening period, were very small and quite immature. Fortunately, during the latter part of September and in October there was a copious rainfall, making the conditions of growth excellent for the apple.

But this change in the weather came too late to correct the injuries of the early part of the season. The third week of October a very heavy frost occurred that

caught many of the winter apples still on the trees. It is needless to say that these were materially injured for storing purposes.

One of the results of these conditions was that the harvesting of the fruit was crowded into an exceedingly short period of time. Help, as is usual at this time of the year, was very scarce; and, even if everybody had been anxious to pack in accordance with the Fruit Marks Act, it would have been impossible to secure, under the present system, a sufficient quantity of labour intelligent enough to pack the fruit uniformly and well. Combined with this, the confidence which had been inspired in the minds of the buyers by the enforcement of the Fruit Marks Act since its inception, induced many prominent dealers from England to advance large sums of money to local men. So great was their confidence in the influence of the Fruit Marks Act, that they did not take any precaution to follow their money with any efficient system of inspection to determine whether they were getting the fruit for which they had paid.

Owing to many causes, very high prices were paid in the early part of the season, and apples were bargained for in extraordinary quantities long before they were ready for picking. The high prices naturally induced the owners of the apples to pick, ship and store everything on the trees that could be called fruit, no matter how defective. Unfortunately, too, the buyers found it easier to purchase apples by the orchard, that is, buying all the apples of every grade just as they were upon the trees at a definite sum of money for the whole. This is called buying by the 'lump.' It was not difficult to trace many of the breaches of the Fruit Marks Act directly to this system of buying by the 'lump.'

A local buyer who had received advance money from an English firm, upon the agreement of furnishing No. 1 and No. 2 apples at a fixed advance for each, had strong temptations, when he purchased orchards by the 'lump,' to pack as much fruit inferior to No. 2 as he possibly could. Owing to the dry weather the apples were particularly clean and bright, but small, so that buyers found themselves with a large quantity of very clean, bright coloured apples in their possession, but too small to grade No. 1. As their only difficulty was one of size, and as this difficulty would not have been counted seriously against a limited quantity of any particular variety, buyers had no compunction of conscience, and, indeed, there was no law to prevent them, in grading this clean, bright fruit as medium sized No. 1. As there is no standard of size more definite than the word 'medium,' it is easy to see that there might be a wide difference of opinion with reference to any particular specimen as to whether it was a medium sized fruit or not; consequently, the complaints this season from Great Britain have been greater than any year since the passing of the Fruit Marks Act.

ADDITIONAL EFFECTS OF HIGH PRICES.

The high prices that were paid primarily as the result, possibly, of the supposed shortage and partly the result of extraordinary advances of money from Great Britain, naturally induced the buyers of 'lump orchards,' and indeed all who had control of the apples at the time of picking, to store a much lower grade of fruit than would have been stored had the prices promised to be medium or low. This class of fruit would have gone to the evaporator or the cider press, and much of it would probably have been fed to live stock. Having incurred the expense of picking, packing and freight to the storehouses, the temptation was naturally great to include a portion of this fruit in the grades No. 1 and No. 2. As might have been expected, such fruit was not accepted in the British market, except at very low prices.

After the first of November there was a continuous drop in the wholesale price until the middle of January. This made it difficult for the apple merchants of Great Britain to dispose of even the best stock at a profit. Inferior grades on this falling

market were a source of serious loss. Had the quantity of these inferior grades been normal and had the price at which they were bought been low, in all probability they would have been readily absorbed at a paying price, and no complaints would have been forthcoming, even though the packing was not what it should have been. The complaints then are the result of a somewhat larger proportion of apples wrongly graded and marked, and partly of the heavy financial losses of the dealers as the result of a continuously falling market.

INSPECTION.

Anticipating some of the difficulties of the season, the staff of the Fruit Division were on the alert for violations of the Fruit Marks Act. The organization of the inspectors was never better and, as the statistics will show, a larger number of inspections was made this season than ever before. It is to be regretted that the proportion of violations is also greater this year than any year since the inception of the Fruit Marks Act.

Below are given the statistics of inspection for the past seven years:—

——	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7	1907-8.
No. of lots inspected.....	1,468	1,470	1,964	1,641	2,813	2,440	7,352
No. of pkgs in lots inspected.	65,880	154,220	234,343	212,348	330,681	330,866	981,632
No. of pkgs inspected.....	3,155	8,341	10,702	8,798	11,423	13,406	43,243

PROSECUTIONS.

Whenever an inspection is made constituting an offence sufficiently serious to justify a prosecution, the inspector notes upon the report a recommendation that a prosecution be made. The inspector brands the packages he has inspected 'falsely marked' or 'falsely packed' as the case may require, and a notice is sent immediately to the person whose name appears upon the brand. At the same time, the report is sent to the head office at Ottawa. The person packing such fruit is notified from the office that a prosecution is recommended and an explanation is asked for. Usually in the case of a first offence, or where there are other extenuating circumstances, a prosecution does not follow. In all other cases a prosecution is instituted. As a case has to be tried where the offence was committed, it is frequently necessary to take the inspectors, who are witnesses, long distances to attend court. Since the law allows a period of six months in which to lay an information, it is often deemed inexpedient to take the inspectors away from the work of inspection during the busy shipping season for the purpose of acting as witnesses at distant points. Many of the prosecutions, therefore, are made after the close of the port of Montreal in the latter part of November. This year, however, several cases were prosecuted early in the season for the purpose of impressing the shippers with the fact that the Fruit Division would follow the recommendations of the inspectors and prosecute any cases advised by them. Notwithstanding this warning, many packers continued to violate the Fruit Marks Act, with the result that the number of prosecutions this year is greater than ever before in the history of the Act.

CONVICTIONS UNDER THE FRUIT MARKS ACT.

The following persons have been convicted of violation of the Fruit Marks Act during the season 1907-8.

Name.	Address.	Number of Charges.
Amabel & Arran Fruit Growers' Association	Allenford, Ont.	5 charges.
Geo. E. Alger	Frankford, Ont.	2 charges.
Philip Austin	Arkona, Ont.	3 charges.
C. Baily	Elmwood, Ont.	
Cormon Baker	Brighton, Ont.	
Robert Balfour	Port Perry, Ont.	
H. A. Beech	Brighton, Ont.	
H.Bickle	Brooklyn, Ont.	3 charges.
John Bongard	Picton, Ont.	2 charges.
W. R. Bonter	Trenton, Ont.	4 charges.
Albert Brent	Port Perry, Ont.	2 charges.
A. E. Brown	Ameliasburg, Ont.	
Edwin Brown	Port Hope, Ont.	
Jas. Caeser	Lucknow, Ont.	
D. Cantelon	Clinton, Ont.	3 charges.
Geo. Cantelon	"	
Frank Casner	Harley, Ont.	3 charges.
Blake Cheer	Brighton, Ont.	
Thos. H. Cheer	"	
A. D. Clapp	"	
A. A. Clarke	"	
Robert Coyle	Colborne, Ont.	6 charges.
Wm. Dauncy	Exeter, Ont.	
G. W. Davis	Colborne, Ont.	
Sam. Dudley	Colborne, Ont.	
J. Duncan	Exeter, Ont.	
E. E. Elliott	Harley, Ont.	
Robert Elliott	Goderich, Ont.	
L. Emerson	Tweed, Ont.	
T. H. Everson	Oshawa, Ont.	
F. A. Ferguson	Frankford. Ont.	
G. H. Flood	Paisley, Ont.	
G. W. French	Colborne, Ont.	2 charges.
A. D. Fulford	Brighton, Ont.	2 charges.
Harlow Fulford	"	
A. L. Futher	New Dundee, Ont.	7 charges.
A. Galbraith	Parkhill, Ont.	5 charges.
A. Gerrie	New Dundee, Ont.	
Gifford & Conlin	Oshawa, Ont.	3 charges.
R. J. Graham	Belleville, Ont.	3 charges.
Groff & Onderdonk	Trenton, Ont.	
E. M. Henry	Oshawa, Ont.	2 charges.
Henry Herrington	Brighton, Ont.	2 charges.
S. P. Herrington	"	2 charges.
A. K. Hodgins	Lucan, Ont.	
Reginald Hodgins	Saintsbury, Ont.	
W. M. Ives	Brighton, Ont.	
W. M. Jenkins	Clinton, Ont.	
Jones & Clark	Exeter, Ont.	
John Joynt	Lucknow, Ont.	
F. H. Lazier	Brighton, Ont.	2 charges.
Allen Lovett	"	
J. E. McDonald	Colborne, Ont.	
Chas. McFalls	Mooresville, Ont.	
Cecil McLeod	Centralia, Ont.	
Alex. McPherson	Exeter, Ont.	
Jas. Marchen	Tweed, Ont.	
W. Mirron	Wooler, Ont.	
W. G. Monet	Port Perry, Ont.	3 charges.
F. C. Morrow	Colborne, Ont.	2 charges.
Sam. Nesbitt	Brighton, Ont.	2 charges.
M. B. Nichols	"	
Orono Fruit Growers' Association	Newcastle, Ont.	
Parkhill Fruit Growers' Association	Parkhill, Ont.	3 charges.
H. Peters	Toronto, Ont.	
Wm. Reid	Lucan, Ont.	
John Royal	Belleville, Ont.	
S. Rutley	Exeter, Ont.	
R. K. Scott	Port Hope, Ont.	4 charges.
W. H. Smith	Brighton, Ont.	
W. T. Smith	Chesley, Ont.	2 charges.
S. Summerfeldt	Sutton, Ont.	2 charges.
T. J. Thompson	Spring Brook, Ont.	
Robert Wade	Brighton, Ont.	2 charges.
R. Weston	Clinton, Ont.	
Frank Wilson	Lakeport, Ont.	
John & Robert Coyle	Colborne, Ont.	
S. W. Staples	Baltimore, Ont.	

Name.	Address.	Number of Charges.
Raymond Alix	Sherbrooke, P.Q.	
Ephrem Charron	Rougemont, P.Q.	
C. O. Allen	Kentville, N.S.	
J. B. Allison	Windsor, N.S.	
G. W. Beckwith	Sheffield Mills, N.S.	2 charges.
G. E. Best	Waterville, N.S.	
J. Earle Bigelow	Canning, N.S.	
Craig Caldwell	Cambridge, N.S.	
D. P. Foster	Clarence, N.S.	
J. D. Gates	Margaretville, N.S.	
T. L. Harvey	Wolfville, N.S.	
A. F. McBride	Canning, N.S.	
J. Maxner	Wolfville, N.S.	
H. C. Marshall	Williamston, N.S.	
G. N. Marshall	Bridgetown, N.S.	
C. Messenger	Tupperville, N.S.	
T. T. Messenger	Centerville, N.S.	
C. Morse	Melvern Square, N.S.	
J. M. Payzant	Falmouth, N.S.	
G. N. Reagh	Middleton, N.S.	
Reed & Jones	"	
G. Starritt	Paradise, N.S.	
L. J. Whitman	Waterville, N.S.	
A. D. Wilkins	Clarence, N.S.	

A few more cases are still pending. The fines imposed have been absurdly small considering the nature of the offence, the magistrates in most cases imposing the minimum of twenty-five cents per barrel—a penalty which experience has shown is not a sufficient deterrent.

It has been found that some of the packers have taken advantage of the 20 per cent allowance in the definition of No. 2 apples to include that proportion of absolute trash, which if not a violation of the letter of the law is certainly contrary to the spirit of the law. Parliament has been asked to amend the law as follows*:—

A new section is added to define the term 'culls,' namely:

'(*c*) "Culls" shall include fruit that is either very small for the variety, or immature, or the skin of which is broken so as to expose the tissue beneath, or that is so injured by insects, fungi, abnormal growths, or other causes, as to render it unmerchantable.'

The definition of No. 2 grade as proposed reads:

'No person shall sell, or offer, expose or have in his possession for sale, any fruit packed in a closed package, upon which package is marked any designation which represents such fruit as of No. 2 quality, unless such fruit *includes no culls and*† consists of specimens of not less than nearly medium size for the variety, and not less than 80 per cent free from worm holes and such other defects as cause material waste, and properly packed.'

The penalties for first offences have been increased, with further increases for second, third and subsequent offences. The new penalty sections of the Bill are as follows:—

'328. Every person who by himself or through the agency of any other person, violates any of the provisions of sections 320 and 321 of this Act (marking and packing), shall be liable, for the first offence, to a fine not exceeding twenty-five dollars and not less than ten dollars; for the second offence, to a fine not exceeding fifty dollars, and not less than twenty-five dollars; and for the third and each subsequent

* These amendments were assented to and became law on July 20, 1908.

† The words in italics are new.

offence, to a fine not exceeding two hundred dollars and not less than fifty dollars, together, in all cases, with the costs of prosecution; and in default of payment of such fine and costs shall be liable to imprisonment, with or without hard labour, for a term not exceeding one month, unless such fine and costs, and the costs of enforcing them, are sooner paid.

'2. Whenever any such violation is with respect to a lot or shipment consisting of fifty or more closed packages, there may be imposed, in addition to any penalty provided by this section, for the first offence twenty-five cents, for the second offence fifty cents, and for the third and each subsequent offence one dollar, for each closed package in excess of fifty with respect to which such violation is committed.'

Section 329‡ of the said Act is amended by striking out, at the end thereof, the words 'forty dollars,' and adding thereto the words ' one hundred dollars for the first offence, and two hundred dollars for the second and each subsequent offence, together, in all cases, with the costs of prosecution; and in default of payment of such fine and costs shall be liable to imprisonment, with or without hard labour, for a term not exceeding one month, unless such fine and costs, and the costs of enforcing them, are sooner paid.'

The following table gives the statistics of the convictions secured under the Fruit Marks Act since its inception:—

	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.	1907-8.
Ontario	9	15	23	6	22	22	155
Quebec	1	1	1	.....	6	.....	2
Nova Scotia	2	6	10	3	16	14	21
New Brunswick	.....	.....	5	.....	1	.....	.....
Manitoba	.....	4	2	2	1	1	.....
British Columbia	.....	.....	2	1	4	3	.....
	12	36	43	12	50	40	178

FRUIT CROP REPORTS.

Five fruit crop reports were issued during the fruit season, at the end of the calendar month, from April to September. They were particularly useful this year owing to the exceptional nature of the season.

The winter of 1906-7 was severe and some injuries were reported to trees of all kinds. The Japanese plums suffered particularly, as did also peach trees in the Essex district. Peaches were particularly affected among the tree fruits, and unmulched strawberries and raspberries among the small fruits.

The exceptionally cold spring retarded the opening of the leaf buds and blossom buds from one to three weeks. Relatively the southern portions of Canada were later than the northern portions of the fruit belt. These conditions had a very marked effect upon the markets, especially for small fruits. Usually there is a difference of two or three weeks between the time of ripening of strawberries in Southern Ontario and in the neighbourhood of Montreal and Ottawa, the largest markets for the small fruits of Southern Ontario. Owing to the conditions prevailing this season the small fruits from Southern Ontario reached these large cities only a few days earlier than the local crop; and, notwithstanding the fact that there was a decided shortage in small fruits in the aggregate, yet, as both the distant fruit and the local fruit arrived on the market at the same time, prices were not always as good as the shortage would have indicated. The canneries, however, were short in their acreage for the season, and they came into the markets with a much higher price than usual, offering fre-

‡ Section 329 refers to the offence of altering or effacing marks after inspection.

Fig. 1.—One of the few remaining French pear trees on the Canadian side of the Detroit River reputed to have been planted by the Jesuit Fathers who first explored this district. This tree is eighty feet high and bears abundant crops of fruit.

Fig. 2.—Picking Gravensteins in Nova Scotia.

An Apple Orchard 75 miles below Quebec City.

quently five or six cents per box at the canneries. This relieved the situation, and on the whole the small fruit growers had a prosperous season.

The tree fruits blossomed freely, and all kinds promised a full crop, with the possible exception of peaches.

The weather during the month of June proved very favourable on the whole for fruit, and trees of all kinds rapidly recovered from the check which they received by the late spring.

The general outlook for apples was a light or medium crop of early and fall fruit, with better prospects for the winter fruit. July and August proved very dry in Ontario, so that the prospects at the end of August showed a decline over the previous months. Fortunately rain fell during September, relieving the gloomy outlook; and though the fruit did not develop to the usual size, it was nevertheless comparatively bright and clean.

Apples coloured well towards the middle of October, and everything promised not only a fair yield of winter fruit, but fruit of good colour and fair quality, though lacking in size. Unfortunately, on the 20th and 21st of October there was a very serious frost that caught fully 50 per cent of the winter fruit in Ontario. Where the apples were left upon the trees undisturbed until the frost had left the apples, the evil results were not directly apparent. Many packers made the mistake of handling their apples while still frozen. In all such cases the results were disastrous. Of course the keeping qualities of the apples frozen on the trees proved poor, and this helped to swell the large number of slacks and shakes so conspicuous in this year's business.

On October 8 a terrific wind storm swept over the Annapolis Valley in Nova Scotia and fully one-third the apples were shaken from the trees. Many of these were so slightly injured that it was impossible to distinguish clearly between the windfalls and hand-picked apples. Many slightly bruised apples found their way into barrels and afterwards deteriorated rapidly. The rain during the gathering season was excessive in Nova Scotia, and the frost of October 21 also did considerable injury. It was accompanied here by a heavy fall of snow. The winter has been very mild, too mild for long storage. Hence the late winter and spring shipments have shown a very serious percentage of loss.

The fruit crop in the Annapolis Valley proved somewhat better than was expected even from the latest reports, while the fruit was on the trees, and, though prices nominally ruled high early in the season, the fact that many of the speculators failed to pay for their purchases has rendered the season only a moderately good one financially.

FRUIT DISTRICTS IN THE DOMINION.

The value of mapping the Dominion into fruit districts was well demonstrated by the irregularities of the distribution of the apple crop this season. For the purpose of the Fruit Crop Report the Dominion has been divided into ten districts, which may be briefly defined as follows:—

District No. 1.—Counties bordering on Lake Erie.
District No. 2.—Counties on Lake Huron and inland to York county.
District No. 3.—Counties bordering on Lake Ontario north to Sharbot Lake and Georgian Bay.
District No. 4.—Ottawa and St. Lawrence valleys to Lake St. Peter and south-western Quebec.
District No. 5.—New Brunswick with northeastern Quebec.
District No. 6.—Hants, King's, Annapolis and Digby counties, Nova Scotia.
District No. 7.—Nova Scotia not included in District 6.
District No. 8.—Prince Edward Island.
District No. 9.—Lower mainland and islands, British Columbia.
District No. 10.—Inland valleys, British Columbia.

Those who would get full value from any fruit crop report would do well to study closely the nature of the crop in each of these districts. Taking it particularly in connection with the apple crop, it may be said that District No. 1 grows a large quantity of apples of good size, fine colour and excellent quality. Their one defect is that even the winter varieties ripen so early in the fall that they deteriorate very materially before the cold weather of the early winter sets in and, therefore, unless they are placed in cold storage as soon as they are matured in October, they are apt to show a large amount of waste if any attempt is made to keep them during the winter months. The apples, therefore, in this district must all be regarded as fall and early winter varieties, because there are no cold storage facilities to enable the holding of them for winter shipping stock. Consequently, if it should appear that there was a large crop in District No. 1, it would not materially affect the quantity of winter shipping apples, but would be counted in with the fall and early winter apples, no matter what the varieties were. To this we might make the possible exception of such varieties as the Ben Davis, Stark and similar varieties that are very little grown in this district.

District No. 2 grows excellent winter apples. It is far enough north, or the elevation above the sea level is such, that the winter varieties like the Greening, Baldwin, Spy and Russet, ripen just as the early winter sets in; consequently, these varieties may be picked and stored, with advantage, as winter shipping apples.

A very marked peculiarity of the district is that orchards, though numerous, are small. The district is a very large one and apples can be grown to perfection in any part of it; but the farmers are engaged, for the most part, in mixed farming, with a general preference towards a specialty in stock, if anything. The orchards, therefore, are usually not well taken care of, and from the fact that they are small and often some distance apart, it is expensive for the ordinary itinerant buyer to buy and harvest them. In view of this fact, when winter apples are plentiful elsewhere, many portions of this district are not visited by apple buyers; and the crop then goes to the evaporator and, in more cases, to the cider mill, or perhaps, more frequently still, is used locally or fed to stock.

At three or four points selling associations have been formed, and wherever these have been organized apple growing is exceedingly profitable.

In years like the present, when there was a probability of apples being scarce, this whole district was overrun with buyers; and, though the orchards were far apart and small, yet the district is so large that the aggregate of fruit becomes an exceedingly important factor in determining the total quantity of winter apples available from Canada. Should there be a large crop of apples in Europe and the United States, as well as in Canada, next year, it would be a fair inference that very few apples comparatively would be shipped from this district, and the farmers who did sell, except in a few districts where they are organized, would secure very low prices.

The aggregate number of trees in this district, according to the most reliable reports, would be about 2,311,539 trees. Even with a very moderate crop of one barrel per tree, it will be readily understood that high prices will bring out a large quantity of fruit from this district; but it is equally important to bear in mind that, owing to the conditions enumerated above, low prices would fail to get any appreciable quantity even in a year of an average crop.

District No. 3, the Lake Huron and Georgian Bay district, grows an equally good quality of winter apples; but the orchards are larger and the fruit growers are taking better care of them. Pruning, spraying and cultivating are common. The varieties planted are fewer in number and confined almost exclusively to winter apples. The aggregate of trees in this district is about 3,900,000 trees. Even if we were to estimate that the trees gave no larger yield than in District No. 2, the aggregate of fruit suitable for winter shipment might easily double or quadruple that from District No. 2.

Another significant feature that must be taken into account in all future apple reports is that planting is being done quite freely in District No. 3. The number of

young trees under ten years old probably equals the present plantings. Consequently, each succeeding year there will be a large addition to the aggregate of the crop coming from District No. 3 as the result of new orchards coming into bearing. There will be a tendency, therefore, to underestimate the crop from this district on this account.

District 4 includes the Ottawa and St. Lawrence valleys in Ontario and the counties in Quebec south of the St. Lawrence and as far east as Lotbinière. This district has a large quantity of apples of the Fameuse and Wealthy type. The climate is too severe for the standard winter varieties grown in Ontario. The varieties, such as the McIntosh Red, Wealthy, Wolfe River and a number of other hardy varieties, are all fall and early winter apples. In estimating the apple crop, therefore, consideration must be given to this fact, that a large crop of apples in District No. 4 will materially affect the market only during the fall and early winter months, and even in such cases the apples grown in this district are more desirable for desert purposes than for cooking purposes. They, therefore, occupy a special position in the market.

District No. 5 has comparatively few trees. The quantity of fruit raised here is not enough for home consumption, so that it need scarcely be taken into consideration in an estimate of the crop for commercial purposes. This district includes New Brunswick. The possibilities of orcharding in the St. John valley are so great that there is a probability in the future of having to make a separate division of this part of district 5 to secure greater accuracy in the estimate.

District No. 6 is an exceedingly important one in apple production. It includes the four counties of Hants, Kings, Annapolis and Digby in Nova Scotia. The most probable estimate of the number of trees in these counties is in the neighbourhood of one million. It would be quite possible then, considering the high state of cultivation in which a large number of the orchards are kept, to have a surplus of five or six hundred thousand barrels for export.

It will be readily seen that this is a very important fruit district in estimating the marketable crop for any particular year. The Gravenstein forms the largest bulk of their earliest shipments. This variety, however, is being less planted, and the district is becoming more and more confined to the winter shipping varieties. The Blenheim Orange type appears to flourish here better than the varieties so successful in districts 1, 2 and 3. Fortunately these are extremely popular in the English market and, therefore, are always likely to be in good demand.

District No. 7 embraces the rest of Nova Scotia not included in District No. 6. A few isolated and protected valleys, particularly in the county of Lunenburg, are demonstrating their capacity for growing fruit in commercial quantities; but as a whole it may be said that there is not enough winter fruit grown for home consumption, nor is there sufficient quantity to affect appreciably any results obtained from the other divisions.

District No. 8 includes Prince Edward Island. There is a small quantity of early fruit grown here for export, which may increase somewhat in the near future, but is not enough at present to appreciably affect the market. This district still imports winter fruit for home consumption.

District No. 9 includes the valley of the Fraser from Lytton southward, the lower coast line and the Island of Vancouver in British Columbia. This is a mild and moist climate, favourable to fruit growing, which is carried on under very different conditions from those prevailing in District No. 10.

District No. 10 includes the interior valleys of British Columbia, which have a comparatively dry, warm climate. Irrigation is required in many of these valleys, and it is therefore desirable that they should be grouped together, inasmuch as though they differ among themselves slightly, yet for commercial purposes the fruit is similar.

Districts 9 and 10 will become in the near future much more important factors in estimating the total crop of the Dominion.

In making an estimate, therefore, of the crop of the Dominion, special attention should be given to the different districts according to the kind of fruit and the season in which it is marketed. If, for instance, an estimate is being made of the apple crop available for shipment up to Christmas, the whole apple crop of District No. 1 and District No. 4 will receive special attention. If prices were specially high at this season of the year, there would be then a tendency to force part of the long-keeping apples of districts 2, 3 and 6 on the market immediately. If prices in the summer and fall months were low it is probable that some of the apples of districts No. 1 and No. 4 would be held for early winter shipments. If an estimate were being made of the good winter shipping stock of the Dominion, special attention would be given to Districts 2, 3 and 6.

The commercial pear and peach crop would be largely in District No. 1, with, however, a few commercial pear orchards in districts 2 and 3.

The commercial plum crop is confined largely to districts 2 and 3.

The commercial peach and grape crop is confined entirely to District No. 1 and, indeed, to two or three counties in this district.

The small fruit for commercial purposes is grown very generally in all the districts, but larger plantations are in Districts 1, 2 and 3 and District 6 is increasing the acreage of small fruit very rapidly.

Districts 9 and 10 have so far affected only their local markets and the markets of the Northwest to a limited extent. Their capacity, especially for small fruit, is such that they can easily, in a few years, have a very marked effect upon the markets of Manitoba, Saskatchewan and Alberta.

It will thus be seen that a simple lumping of the Fruit Crop Reports and striking an average, would by no means give a proper idea of the commercial fruit crop of Canada. The capacity of the different divisions, as well as a general average of the crop, must be taken into account.

The prices for the many kinds of Canadian fruits are determined by the prices in foreign markets. Therefore, in order to arrive at a satisfactory conclusion with reference to prices, the fruit crop of the countries entering into competition with Canadian fruit must be estimated. For practical purposes the crop of Great Britain, our largest foreign market, and the crop of the United States, our largest competitors in that market, will suffice. The fruit crop of Europe, however, does exercise considerable influence and must always be taken into account in any accurate estimate upon which to base prices.

MEETINGS.

A very important feature of the work of the inspectors is their attendance at gatherings of fruit growers, where they are in great demand to explain all features of the Fruit Marks Act, which include the practical work of grading and packing fruit. Meetings have been attended by members of the staff as follows:—

Prince Edward Island	12
Nova Scotia	26
New Brunswick	2
Quebec	15
Ontario	12

In addition to this, members of the staff attended the annual meetings of the Provincial Fruit Growers' Associations of Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Ontario and British Columbia.

In conjunction with other members of this branch, I attended five meetings in the County of Kent last May. The object of these meetings was to stimulate the dairy and fruit interests. The meetings were all well attended, and much good will result, no doubt.

During the month of June, I attended a series of twelve meetings in Prince Edward Island. These meetings were purely fruit meetings under the auspices of the Provincial Department of Agriculture. The object of the meetings was to arouse some interest with reference to marketing the fruit already grown on the Island and to make suggestions with reference to the future development of the fruit industry there.

The Island is peculiarly well situated for the growing of certain varieties of apples. The climate is too severe to admit of growing the common winter varieties, but the Duchess, Astrachan, Wealthy, Pewaukee, Alexander and Wolfe River and other varieties of this class, do remarkably well there, and promise to be a remunerative addition to the system of mixed farming practiced on the island.

A scheme was suggested for the co-operative buying of nursery stock, which may be the means of increasing the plantings to some extent for the ensuing year.

I attended the short course in horticulture at Guelph, February 4, 5, 6 and 7, during which demonstrations were given in apple packing in boxes and barrels. I also delivered addresses on the subject of grading and marketing apples. I attended a similar course at Ste. Anne de Bellevue, March 18 and 19. The attendance at both was exceptionally large, and indicated that such courses are likely to be extremely popular.

THE BROWN TAIL MOTH IN NOVA SCOTIA.

In April of 1907 the Brown Tail moth was discovered in Nova Scotia. Measures were immediately taken by Professor Cumming, Secretary of Agriculture for Nova Scotia, to inspect large areas of the province, with the result that the pest was found to be quite generally scattered over Kings, Annapolis and Digby counties. To assist in the work of locating the boundaries within which the insect was to be found and to devise means for its destruction, the Provincial Department of Agriculture asked for the services of Mr. G. H. Vroom, Dominion Fruit Inspector. During the months of April and May and at intervals through the summer, Mr. Vroom was engaged in this work. It is satisfactory to note that the efforts of the Department of Agriculture in conjunction with those of the fruit growers of Nova Scotia are likely to keep this dreaded pest in check.

IDENTIFICATION OF VARIETIES.

A large number of fruit growers took advantage of the facilities we have for naming fruits. This work is much appreciated and very much needed at the present time in connection with the fruit industry of Canada. For the best results, we should have access to a collection of wax models, of the rarer varieties at least.

I have the honour to be, sir,

Your obedient servant,

A. McNeill,

Chief of Fruit Division.

CORRESPONDENCE *RE* THE ADMINISTRATION OF THE FRUIT MARKS ACT.

Extracts from Statement re *Grading and Marking, sent to the Press in Great Britain.*

In view of certain criticisims which have reached this office concerning the administration of the Fruit Marks Act and the marking and grading of Canadian apples as received in Great Britain during the present season, I desire, as head of the branch of the Department of Agriculture which is charged with the administration of this Act, to make the following statement:

The complaints regarding the grading or marking of Canadian apples this year are confined largely to the question of the size of the apples, and it is alleged that many barrels marked No. 1 should properly have been marked No. 2 on account of the small size of the apples.

The section of the Fruit Marks Act which defines No. 1 grade reads as follows:—

'Sec. 321. No person shall sell, or offer, expose or have in his possession for sale, any fruit packed in a closed package, upon which package is marked any designation which represents such fruit as No. 1 quality, unless such fruit consists of well grown specimens of one variety, sound, of *not less than medium size* and of good colour for the variety, of normal shape and not less than ninety per centum free from scab, worm holes, bruises and other defects, and properly packed.'

It will be observed that medium sized apples come properly under grade No. 1. That is to say, a package containing only medium sized apples may be correctly marked No. 1 if the apples conform to the requirements in other respects. Those who drew up this definition had in mind the fact that in ordinary seasons there is along with medium sized apples a large proportion of large or very large apples which go to improve the general appearance and character of the No. 1 grade. The past season was an extraordinary one in this respect, as all varieties grown in Ontario and many varieties in Nova Scotia were undersized. Thus many packers who have fully observed the provisions of the Fruit Marks Act in a strict legal sense, have been unable to make as good a showing as usual, although the crop was unusually clean and bright.

As for the administration of the Fruit Marks Act, it is evident from some of the comments received that there is considerable misapprehension on this point as well as in reference to the definition of grades in the Act itself.

In the first place, it should be made clear that there is no attempt made to carry out a general inspection or official grading of all apples. There is no government supervision of the packing, as has been suggested. There are many reasons why it is impracticable to carry out such a scheme, but they need not be given here.

There is this to be said, however, that the staff of inspectors was increased in 1907, and the actual number of packages inspected so far this season is greatly in excess of any previous year. Any suggestion that the enforcement of the Fruit Marks Act, as far as it has ever been undertaken by the Department of Agriculture, has been less vigorous or effective during the present season than in past years is absolutely without foundation.

There is one more point on which there appears to be a misunderstanding. We find that a number of f.o.b. contracts have been made this year in which it has been either stipulated by the purchaser, or promised by the seller, that the apples were to be subject to 'government inspection,' &c. A contract

which rests on such a clause cannot be carried out, because it would be impossible for the government to undertake such inspection or to assume any responsibility in such cases. A definiteness might be given to contracts if it were provided that the apples should be packed and marked according to the definitions and grades as provided in the Fruit Marks Act, but that would not imply government inspection.

Dealers and importers in Great Britain may be assured that the Department of Agriculture is desirous of assisting the trade in every possible way. Suggestions and criticisms are invited, but it is desirable that there should be a clear understanding of the work which is undertaken by the Department.

J. A. Ruddick,

Dairy and Cold Storage Commissioner.

Ottawa, Ont., Jan. 13, 1908.

The publication of this statement in the press of the United Kingdom brought out several replies, both direct and in the newspapers.

From Mr. Fred. Pritchard, in Liverpool 'Journal of Commerce, January 31, 1908.

THE GRADING OF CANADIAN APPLES.

To the Editor:

Mr. J. A. Ruddick, the commissioner in Ottawa for dairy and cold storage produce, does not appear to be very happy in his defence of the workings of the Fruit Marks Act, put in operation by his department. Mr. Ruddick also appears to have misquoted himself in his defence of the breaches of that Act, because he distinctly says that if we have no No. 1 apples we must call the second grade No. 1's.

Now, our friends in Malaga, Spain, who send us muscated raisins of No. 1 quality, as designated by the maximum number of crowns on the box, do not go so far as Mr. Ruddick, as when a season happens when the highest grade of raisins are not obtainable, the highest designation of marking is not used. So ought the Canadian Department of Canada to enforce their Act

I am prepared for Mr. Ruddick's question: 'How do you propose to improve matters?' and I am willing to give him my suggestions as to how the trade in Canada, both to the speculator and the farmer, or, in other words, the taxpayer in the province of Ontario, can be made to bring about a much more profitable industry than that which now exists.

The whole difficulty which the Deparment of Agriculture has to contend with is one which it has not yet in the slightest degree taken into considertion. It is the ridiculous system of contracting for apples by the orchard in the months of July and August, before either the grower or the buyer can form any conception as to the eventual maturing of such apples, influenced as they are by the climate, hail storms, wind storms, and so forth. Buyers flood the country, and with the wish as father to the thought, they make arrangements in their own mind for apples which are hardly visible on the trees at the time of purchase, to mature and yield them something like 75 to 80 per cent of No. 1 grade, as required by the Fruit Marks Act. Season after season these expectations are not realized, and, as in this season it was easy to make a contract in the month of August for 75 per cent No. 1 fruit, it was difficult in the month of November to buy carloads yielding 40 per cent of No. 1 fruit. How is this difficulty to be done away with? First of all by the exercising of a very strong hand on the part of the Agricultural Department;

by the continuation of the Act as it is now, but with the insertion that No. 1 ranging in size between 2½ and 2¼ inches in diameter, that No. 2's shall not be less than 2¼ inches in diameter, and that No. 3's shall be good apples of perhaps some deformity not of great moment to their marketable value, but ranging in size between 2½ and 2¼ inches in diameter, and not less. It should also be inserted in the Act that should any barrels be found under a mark which are not in accordance with this Act the entire mark shall be described as falsely branded, as a protection to the trade here and as a benefit to the industry ultimately. Buyers here do not understand thoroughly the intention of the Act, and if they see three or four barrels in a mark branded 'Falsely marked,' they naturally come to the conclusion that this is a guarantee that the balance of the mark is as described on the barrel. As it is true that Canadian inspectors cannot open every barrel, so it is true in a large distributing centre like Liverpool that buyers here cannot open every barrel, and the trouble has only to be faced when these apples come into the hands of their ultimate receivers. I have seen apples in Liverpool this year, and thousands of barrels of them, which for false packing compare very unfavourably with all tricks of marking, the predominence of which some ten or twelve years ago brought about the good intentions of the Canadian government in endeavouring to eliminate the difficulty.

* * * * * * *

I trust these few remarks from one who has covered the ground for a considerable number of years—who has lost on bad apples, and profited by good ones—will be looked upon as only an endeavour to bring about a better state of affairs. Englishmen are becoming more addicted to the use of good apples, and it appears to me a pity that a profitable industry like this should go from bad to worse, especially in view of the glorious prospects which are before the Canadian apple producer, buyer and dealer, in the system of preference which before long must assuredly enhance the value of this produce.

Yours, &c.,

(Sgd.) FRED. PRITCHARD.

6 Sir Thomas Street, Liverpool,
January 30, 1908.

From Mr. Ruddick in Journal of Commerce, February 13, 1908.

To the Editor:

SIR,—I have received a copy of the *Journal of Commerce* of the 31st ult., containing a communication from Mr. Pritchard in reply to my statement *re* the administration of the Fruit Marks Act and the marking and grading of Canadian apples.

Mr. Pritchard says, 'Mr. Ruddick also appears to have misquoted himself in his defence of the breaches of that Act, because he distinctly says that if we have no No. 1 apples we must call the second grade No. 1's.'

This is such a surprising assertion that I can scarcely believe that Mr. Pritchard intended to be fair when he penned it. I did not defend violations of the Act in my statement, nor did I say if we have not No. 1 apples we must call the second grade No. 1. We recognize the fact that there is a tendency on the part of the growers and packers of apples to grade the best of each season's crop as No. 1, but we have been combating that idea as vigorously as possible, laying down the principle that No. 1 grade, as defined in the Act, is *not* an elastic definition to be varied from year to year. In my communication, which appeared in your issue of the 30th ult., I merely quoted from the

Act to show that medium sized apples, (i.e., medium size for the variety), may be correctly marked No. 1, if the requirements of the Act in other respects are met, and I pointed out that owing to abnormal conditions this last season, there were practically no larger apples, such as in ordinary years are packed along with those of medium size.

Mr. Pritchard then says, 'The whole difficulty which the Department of Agriculture has to contend with is one which it has not yet in the slightest degree taken into consideration. It is the ridiculous system of contracting for apples by the orchard in the months of July and August,' &c.

We realize quite as fully as your correspondent does that the system which he refers to is a bad one, but I would like to ask, does he seriously mean to suggest that the Department of Agriculture should attempt to dictate to the farmers of Canada as to how, when, or to whom they should sell their produce? Surely not. There is another side to this question, Mr. Editor, and I would like to suggest that as the agents who make these contracts are mostly representatives of the large receivers in Great Britain who furnish the money for the purchase of the apples, it is not unreasonable to look to them for a remedy. These agents are chiefly concerned to secure the quantity of apples that their principals in the old country expect from them. To make sure of this they resort to the pernicious contracting system which Mr. Pritchard very properly condemns. When the fruit is picked, the buyer often finds that while he may have the requisite number of barrels of apples, he is unable to furnish as many properly graded No. 1's or No. 2's as his agreement calls for, and he resorts to overgrading to make up the quantity, and takes the chance of getting the consignment out of the country without examination by the inspectors. If the firms who advance the money would hold their agents responsible for the proper grading and packing of their purchases, instead of expecting the Department of Agriculture to supervise their work, the apple business would be very much improved. It is the policy of the Department of Agriculture to assist in every legitimate way in the promotion of the apple trade, but that does not relieve dealers from their share of responsibility.

I hope this discussion of the question will do good on both sides of the water, and I hope I have made it clear that there is no attempt to defend or offer excuses for violations of the Fruit Marks Act. We desire only to have things put in a proper light.

I may add that since the opening of the present season down to February 10, there have been 40 convictions for violations of the provisions of the Fruit Marks Act and many other cases are pending. The inspectors prosecute every person against whom they find a clear case of violation of the law.

Yours very truly,

J. A. Ruddick,

Commissioner.

Mr. Ruddick wrote Mr. Pritchard on March 9, and received the following reply:—

From Mr. Pritchard to Mr. Ruddick.

Liverpool, March 23, 1908.

My Dear Sir,—Your kind letter of March 29 is a very delightful conclusion to the friendly correspondence we have had through the medium of our *Journal of Commerce*. I thank you most cordially for your kind expression, which I fully reciprocate.

We are entirely in accord with one another that there is something very wrong in the trade. Frankly, the whole difficulty originates with the excess

of money lent by receivers here to secure large consignments and when speculators with the prospect of making large profits at other people's expense, become possessed of such funds, the result is very readily conceived by those with even a primitive knowledge of the trade.

A point we did not discuss and a further disgrace of 'lump buying' is the relative value of one variety against another—hence 'Ben Davis,' probably the largest crop this season, have hardly on any occasion realized over 15 s. for No. 1, and thousands of barrels are now being sold, as holders have to unload, at 11 s. 6 d. for No. 1; 8 s. 6 d. to 9 s. for No. 2; 7 s. for No. 3. These apples were all 'bulk bought,' and most of them probably cost $3 cars. Now, had bulk buying not been usual, there was no time during the season that Bens were worth on market quotations more than 50 cents for the fruit, and they are not realizing this now.

Against such shrinkage as this I know how hard it is to make men honest, but I am sure you agree with me that we have in some measure probed the root of the evil.

I am, sir,

Very faithfully yours,

(Sgd.) FRED. PRITCHARD.

REPORT

OF THE

DAIRY AND COLD STORAGE COMMISSIONER

FOR THE

FISCAL YEAR ENDING MARCH 31

1908

PART IV.—EXTENSION OF MARKETS DIVISION.

TABLE OF CONTENTS.

Transportation Facilities—Inspection of Iced Car Services—Butter Temperatures—Cargo Inspection—The Export Butter Trade—The Export Cheese Trade—The Export Bacon Trade—The Export Apple Trade.

PART IV.—EXTENSION OF MARKETS DIVISION.

Ottawa, March 31, 1908.

J. A. Ruddick, Esq.,
Dairy and Cold Storage Commissioner,
Ottawa.

Sir,—I have the honour to submit herewith the annual report of the Extension of Markets Division.

During the past year the inspection work of the division has been carried on by about the same staff as heretofore, seven inspectors being employed for the full year and eleven additional inspectors for the period from May 1 to November 30. The distribution of the staff was as follows: Seven cargo inspectors at Montreal; three iced car inspectors at Montreal; three travelling iced car inspectors in Ontario and Quebec; five cargo inspectors at ports in Great Britain.

TRANSPORTATION FACILITIES.

The inspection work referred to in the preceding paragraph has for its main object the improvement of existing transportation facilities for the food products we export, and the Extension of Markets Division has charge of this work because of the fact that one good way of extending the markets for our perishable food stuffs is to so perfect our system of transport that such products as butter, cheese, eggs, fruits and meats may be carried from the initial shipping point to the ultimate market with the least possible risk of deterioration.

The first attempt in this country to provide something better than the ordinary freight car for the transportation of perishable produce was made in 1895, when the Department of Agriculture arranged with the railways to run a special iced car service to Montreal for the carriage of less than carload lots of butter, covering eight routes east and south of Montreal and four routes west of Montreal. From these twelve routes in 1895 an improved service has been extended to 62 routes in 1907, covering about 5,600 miles of railway, over which some fifteen hundred cars were operated.

In 1896 not a single steamer sailing from Canadian ports was equipped with a mechanical refrigerating plant, whereas, during the season of navigation in 1907, there were forty-five steamers so fitted sailing from the port of Montreal with a combined cold storage space of 1,014,157 cubic feet. As these steamers made two hundred and thirty-seven trips in the season, the total cold storage space available was therefore 5,001,819 cubic feet. In addition nineteen steamers with cooled air accommodation of 907,440 cubic feet were in commission last season, the total available cooled air space for the season amounting to 4,119,354 cubic feet. Very great progress has also been made in the direction of improved ventilation in the ordinary holds in the steamers, nearly every steamer engaged on the St. Lawrence route now being fitted with exhaust fans which provide forced ventilation of the holds.

During the year this division has carefully looked after the operation of the iced car services for butter and maintained a close inspection over the loading of all perishable produce shipped from the port of Montreal. In addition our inspectors placed thermographs in the refrigerator chambers and in the ordinary holds in the steamships, in order that we might have records of the temperatures maintained in these different compartments during the voyage. In the old country our inspectors

attended the discharge of every cargo of Canadian products, reporting their condition, method and manner of discharge, &c. These inspectors also removed the thermograph charts and forwarded them to this office, where copies were made and sent to the steamship agents, the Board of Trade, Montreal, and to the engineers of the steamers concerned. An exact record was also kept of the temperature of a number of packages of butter in each lot loaded into the steamers at Montreal and the temperature of the same packages when discharged on the other side.

INSPECTION OF ICED CAR SERVICES.

From May 1 to October 20, we had three travelling iced car inspectors at work, one in Ontario and two in the province of Quebec. These inspectors travelled on the freight trains carrying the iced cars, taking a different route each week, and reported the conditions under which the butter was hauled from the creamery to the railway stations, the temperature of the butter when loaded into cars, the conditions of the cars and the quantity of ice in them. The packages tested by the inspectors were marked so as to be easily detected at Montreal and re-tested there. At Montreal we had two iced car inspectors employed and a third man during the busiest period. These men were in constant attendance at the railway terminals and examined the butter arriving in the iced cars, noting the temperature of the butter, condition of the packages and cars, quantity of ice in the bunkers, &c. They also kept an eye on the men who unloaded the butter and cheese and were careful to see that no butter was allowed to remain on open platforms where it would be exposed to the sun.

ICED BUTTER CAR SERVICE, SEASON 1907.

During the past season it has been most difficult to maintain a satisfactory iced butter car service. The late spring, the labour difficulties at Montreal and the reduced output of butter all contributed to make the service costly to the government and to militate against its efficient operation. At the beginning of the season the Longshoremen's strike caused the railway companies to put an embargo on the shipment of perishable freight to Montreal. After that was settled the G.T.R. teamsters went on strike and that road promptly re-imposed the embargo on perishable freight from western points, while the C.P.R. attempted to carry their own perishable freight and, from competitive points, that of the Grand Trunk as well. As a result of these unfortunate conditions the iced car service became disorganized and it was not until the latter part of June that the regular schedule was restored. After the service got back to normal conditions the shipments of butter were so light, especially from western points, that often the men at the icing stations thought it unnecessary to completely fill the bunkers, as we recommend, and only partially filled them instead. Owing to our complete system of inspection, however, we were enabled to keep close tab on the different services and to promptly notify the railway companies of any irregularities that existed.

DRAWBACKS IN THE SERVICE.

The cars in use were, generally speaking, of the latest type and were well constructed, but they were not always kept perfectly clean, and were seldom disinfected. The icing facilities, too, at many icing points were of the most primitive nature, involving unnecessary labour and waste of time. A small expenditure in this direction by the railways would often reduce the actual cost of icing and promote despatch. The most serious drawback, however, was the irregularity in the running of the way-freights carrying the iced cars. In some sections these trains were often ten hours late, to the detriment of the butter awaiting shipment at the different staions, especially

during warm weather. In the districts referred to these way-freights are bound to run irregularly, and it seems to me that one way out of this difficulty would be for the railways to provide small cold storage rooms at the principal butter shipping stations on routes where irregularity in the running time is most marked.

Before closing this general reference to our iced car service I wish to refer briefly to a misconception entertained by a great many shippers and others regarding refrigerator cars. These people apparently make very little distinction between an iced car and a cold storage warehouse equipped with mechanical refrigeration, and imagine they can pile a car full of warm butter or fruit and that after a day or two the goods will come out as cool as the proverbial cucumber. This, of course, is an absolute fallacy. A refrigerator car is simply an insulated box about 31 feet long, 8 feet wide and 6½ feet deep, with an ice-box at each end 2½ x 5¾ x 7½ feet, holding from one and a half to two and a half tons of ice each. As the capacity of the car is thirty tons of freight it is absurd to expect that three tons of ice will remove the heat from a full carload of goods which are packed so closely that there is little chance for the air to circulate. I wish, therefore, to emphasize the fact that all that may reasonably be expected of an iced car is that it shall carry freight at an even cool temperature, provided the goods are in a *cool* condition when loaded into it.

ICED CAR SERVICE FROM WESTERN ONTARIO.

The shipments of creamery butter from western Ontario points were very light last season, many cars running each week with very small loads, and as usual we found it difficult to arrange for a satisfactory service west of Toronto, especially on the Grand Trunk Railway, as there were many branch lines which had to be covered but which did not furnish sufficient butter to permit of the running of a through car to Montreal. A considerable number of cars, therefore, ran only as far as Toronto, where the butter for Montreal was consolidated into one or more cars, and on account of these trans-shipments we were unable to get, at Montreal, the temperatures of all the packages that were marked by our Ontario inspector. The shipments of dairy butter were, as usual, in a warm condition when loaded and undoubtedly raised the temperature of the creamery butter carried with them.

TEMPERATURES OF ONTARIO BUTTER.

In the season of 1907 our Ontario inspector secured the temperatures of 99 packages of butter at shipping points, which were afterwards re-tested at Montreal with the following results:—

Marked Packages of Butter from Ontario, Season 1907.

(Creamery and Dairy.)

Number of cars carrying marked packages	14
Number of packages tested at shipping points, marked and re-tested at Montreal	99
Average temperature at shipping points	61·7 deg.
Average temperature at Montreal	56·1 "
Reduction in temperature	5·6 "

(Dairy only.)

Number of cars	13
Number of packages tested at shipping points, marked and re-tested at Montreal	75
Average temperature at shipping points	65·3 deg.
Average temperature at Montreal	56·8 "
Reduction in temperature	8·5 "

(Creamery only.)

Number of cars	6
Number of packages tested at shipping points, marked and re-tested at Montreal	24
Average temperature at shipping points	50·2 deg.
Average temperature at Montreal	53·7 "
Increase in temperature	3·5 "

It will be noted that the average temperature at Montreal was 5·6 degrees lower on both creamery and dairy butter; 8·5 degrees lower on dairy alone, and 3·5 degrees higher on creamery alone. Considering the long haul from western points, the high temperature of the dairy butter when loaded, the frequent opening of the car doors, and trans-shipments en route, I think it will be admitted that the above showing is reasonably satisfactory.

As shown in the foregoing table, the creamery butter was loaded at an average temperature of 50·2 degrees, the tests ranging from 41·3 to 61·3 degrees, and the dairy butter at an average temperature of 65·3 degrees, the tests ranging from 50·7 to 78·0 degrees. The average temperature of the butter from each creamery was as follows:—

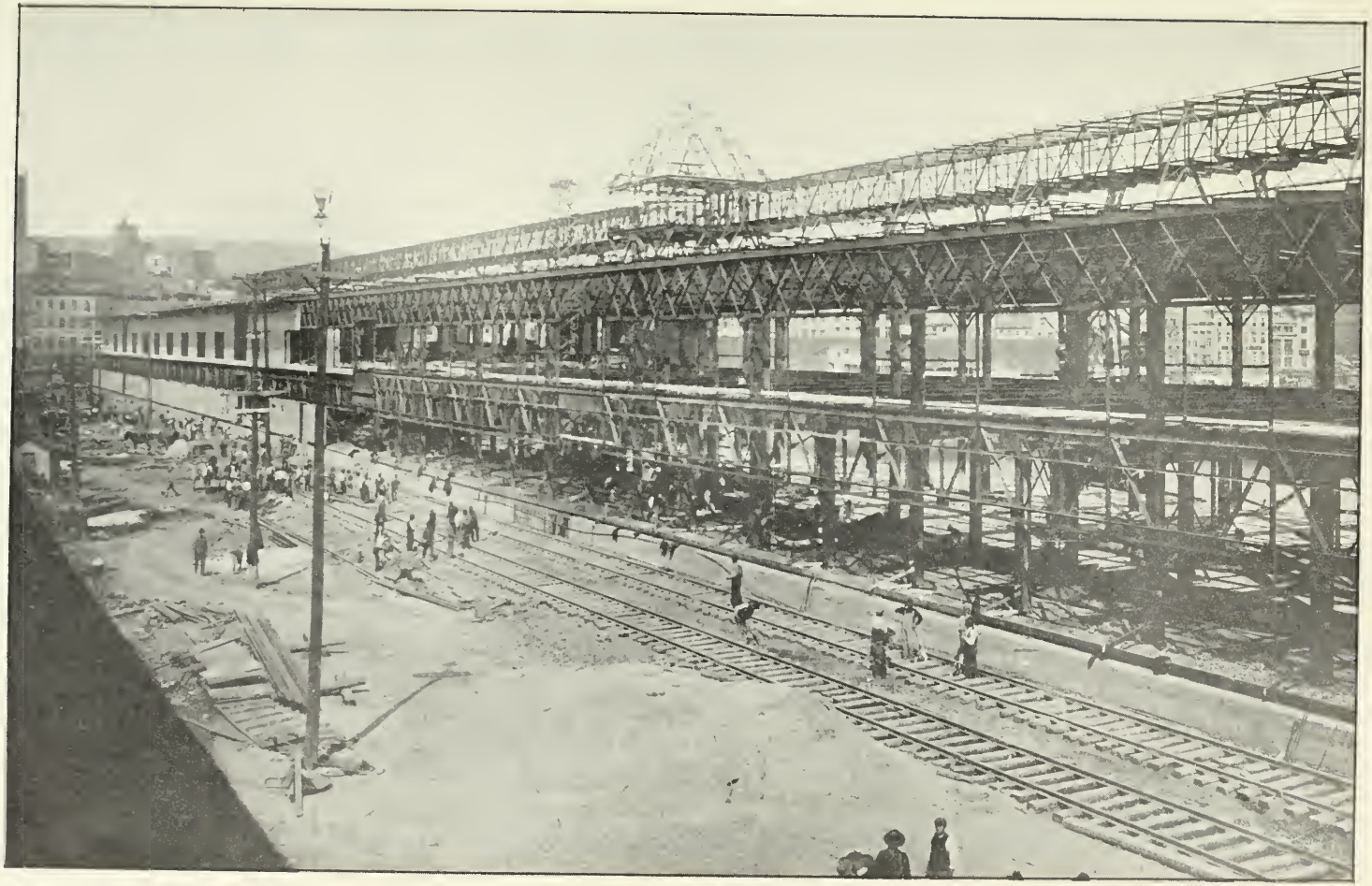
Creamery.	Station.	Number of Packages Tested.	Average Temperature.
			Deg.
O. A. C.	Guelph	4	41·3
Neustadt	Neustadt	4	42·3
Teeswater	Teeswater	5	42·8
Dungannon	Lucknow	6	50·5
Peterboro	Peterboro	3	53·0
Merlin	Merlin	4	54·5
Baden	Baden	6	55·0
New Dundee	Petersburg	3	61·3

The O. A. C., Neustadt and Teeswater creameries have splendid averages, but Peterboro', Merlin and Baden make a poor showing, while New Dundee is out of the running entirely.

TEMPERATURES OF DAIRY BUTTER.

Out of 105 tests of dairy butter made by our inspector, 92 lots were over 60 degrees, while 20 lots were over 70 degrees.

Creamerymen will no doubt say that this warm dairy butter should not be allowed in the same car with the factory article, because the iced car service was primarily



A wharf shed in course of erection at Montreal.

intended to encourage the export creamery butter trade. There are two sides to this a to most other questions, however. In the first place, if the loading of dairy butter in these cars was prohibited we would have to cancel the service on many routes where creameries are few and far between, otherwise the deficit the department would have to pay would be extremely heavy; in fact, more than the butter shipped on these route would be worth. The second and more important consideration is the fact that the bulk of our dairy butter is consumed in this country and, as at present our domestic butter trade is of more importance than our export trade, we are bound to consider it and make some provision for its proper transportation. There is little use, however, in this department providing facilities to transport butter at a temperature of from 45 to 50 degrees if the butter is to be delivered to the cars at a temperature of 70 degrees and over, and it is unfair to the creameryman who has a good cold storage and who is endeavouring to keep his butter at a low temperature to allow warm butter to be placed in a car alongside of his shipment, the temperature of which is raised as a result. Something will have to be done, and I am of the opinion that shippers of dairy butter should be obliged to provide a small cold storage room on the premises where they re-pack and grade their butter, so that it will be reasonably cool when it is handed over to the railway. If this is not done we may yet be compelled to refuse to allow butter of a temperature of say 50 degrees or over to be put into iced cars which are operated under a government guarantee.

TEMPERATURES OF QUEBEC BUTTER.

The following tables show the temperatures of butter at railway shipping points in the province of Quebec during the season of 1907:—

AVERAGE TEMPERATURES OF BUTTER AT QUEBEC RAILWAY SHIPPING POINTS, SEASON 1907.

(Inspector, F. A. Knowlton.)

Creamery.	Location.	Railway.	Number of Packages Tested.	Average. Temperature.
				deg.
S. B. No. 1	Coaticook	G.T.R	13	36·6
Dunham	Dunham	C.P.R	6	39·0
K 35	St. Edwidge	G.T.R	4	39·5
A 448	St. Herménégilde	G.T.R	4	41·5
W. W. Reed	North Hatley	B. & M. & C.P.R	9	41·9
Silver Star	Bedford	C.P.R	6	42·5
Sawyerville Butter Mfg. Co.	Sawyerville	C.P.R	5	43·0
629				
—	La Patrie	M.C. & C.P.R	2	43·0
G				
E. H. Hunter	Stanbridge East	C.V.R	4	43·5
Kingsey	Kingsey	G.T.R	14	43·6
B. M	Baldwin's Mills	G.T.R	8	43·6
G				
—	Coaticook	G.T.R	8	44·6
221				
Waterloo	Waterloo	C.V.R	2	45·0
Hemmingford No. 2	Barrington	G.T.R	3	45·3
Crown	Iron Hill	C.P.R	15	45·5
Magog	Magog	C.P.R	26	45·5
Wayville	Wayville	B. & M. & C.P.R	17	45·8
Smith & Juaire	Knowlton	C.P.R	10	46·2
McKay's Creamery	Hatley Centre	B. & M. & C.P.R	9	46·3
N. Beaudin	Russelltown	G.T.R	6	46·5
H. J. Allen	West Shefford	C.P.R	18	46·6
Magenta M. 85	Magenta	C.V.R	7	46·6
B. H. Ryder	Fitch Bay	B. & M. & C.P.R	3	46·7
Maple Leaf	Laroche	C.P.R	6	46·8
Jas. P. Brown	Aubrey	G.T.R	4	47·0
C. H. Perras	St. Chrysostome	G.T.R	3	47·3
Stanbridge East	Stanbridge East	C.V.R	5	47·5
Daisy A	Kingscroft	B. & M. & C.P.R	4	47·5
Dale 17	St. Edwidge	G.T.R	4	47·5
Vale Perkins	Vale Perkins	C.P.R	7	47·9

AVERAGE TEMPERATURES OF BUTTER AT QUEBEC RAILWAY SHIPPING POINTS, SEASON 1907.

(Inspector, F. A. Knowlton.)

Creamery.	Location.	Railway.	Number of Packages Tested.	Average Temperature.
				deg.
St. Francis	Richmond	G.T.R.	24	48·0
F. & S.	Hemmingford	G.T.R.	3	48·0
Cowansville	Cowansville	C.P.R.	6	48·0
Brome Valley	Brome Valley	C.P.R.	4	48·0
Rose II.	St. Herménégilde	G.T.R.	4	48·0
N. B. 3.	Franklin	G.T.R.	4	48·0
A. Gerin.	Coaticook	G.T.R.	12	48·1
B. A. Longdeau	Shefford Mountain	C.V.R.	5	48·2
Barnston	Barnston	G.T.R.	11	48·2
Mount Orford	Cherry River	G.P.R.	24	48·5
Green Valley	Mansonville	G.P.R.	10	48·5
J. P. Plothier	Kinnear's Mills	Q.C.R.	4	48·5
Melboro Factory	Kingsbury	O.M. & C.P.R.	5	48·8
Canadian R. P.	St. Edouard	G.T.R.	4	49·0
E. McGowan	Howick	G.T.R.	4	49·0
O. Roy	St. Ephrem	Q.C.R. & C.P.R.	16	49·1
E. Depres	Weedon Station	Q.C.R. & C.P.R.	6	49·3
Ayer's Cliff	Ayer's Cliff	B. & M. & C.P.R.	18	49·4
Dale 17 (A. Tremblay)	St. Herménégilde	G.T.R.	7	49,4
C. V. Larose	Compton	G.T.R.	12	49·6
Lazure & Lazure (Rose 20)	Compton	G.T.R.	8	49·8
H. Archambault	Farnham	C.V.R.	4	50·0
Maple Leaf	St. Remi	G.T.R.	3	50·0
J. Gibson	Bromptonville	G.T.R.	6	50·0
G. A. Robb (Reg. No. 21)	Warden	C.P.R.	5	50·0
Silver Lake	Eastman	O.M. & C.P.R.	3	50·0
Riverbank		G.T.R.	4	50·0
J. A. Merrin	Bromptonville	G.T.R.	6	50·2
Morrison & Bowen	East Hatley	B. & M. & C.P.R.	19	50·5
Katevale T. 66	Kateville	C.P.R.	4	50·5
J. E. Dion	St. Evariste	Q.C. & C.P.R.	7	50·6
G. Laureau	Katevale	C.P.R.	10	50·9
Acme Factory	North Stanbridge	C.V.R.	9	51·3
Maple Leaf Factory	Maple Leaf	M.C. & C.P.R.	9	51·4
Douglas Corner No. 1	Douglas Corner	G.T.R.	8	51·5
A. Poulin	St. Evariste	Q.C. & C.P.R.	7	51·7
P. Jolicœur	St. Ephrem	Q.C. & C.P.R.	4	52·0
St. Etienne	St. Etienne	C.P.R.	6	52·0
J. E. Dion	St. Ephrem	Q.C. & C.P.R.	4	52·0
F. W. 108	Napierville	G.T.R.	4	52·3
Sherrington	Sherrington	G.T.R.	12	52·3
West Dunham	Meig's Corners	C.V.R.	9	52·3
Mystic Gem	Mystic	C.P.R.	6	52·7
Missisquoi (A. A. Ayer & Co.)	Frelighsburg	C.V.R.	12	52·8
Holton	Holton	G.T.R.	4	53·5
R. Rimme	Angeline	C.V.R.	2	54·0
Louis Beauleau	Thetford	Q.C.R.	3	54·0
N. Masse	St. Ephrem	Q.C. & C.P.R.	4	54·8
A. Bernard	St. Ephrem	Q.C. & C.P.R.	4	54·8
Athelstan	Athelstan	G.T.R.	4	55·0
Ormstown (Fulford St. Creamery)	Ormstown	G.T.R.	2	55·0
G. Roy	St. Ephrem	Q.C. & C.P.R.	4	55·0
John Kennie	Brooklet	G.T.R.	4	55·8
J. Gauthier	St. Ephrem	Q.C. & C.P.R.	4	56·3
J. J. Vanass & Co.	Wickham	C.P.R.	5	56·8

It will be observed that in 1907 the average temperature ranged from 36·6 degrees to 56·8 degrees. In 1906 the extremes were 38 degrees to 64 degrees, and in 1905, 41·8 degrees to 63·5 degrees. Fifty-one of the creameries tested in 1907 had an average of under 50 degrees as compared with forty-five in 1906 and twenty-eight in 1905.

SESSIONAL PAPER No. 15a

AVERAGE TEMPERATURES OF BUTTER AT QUEBEC RAILWAY SHIPPING POINTS, SEASON 1907.

(Inspector, J. N. Lemieux.)

Creamery.	Location.	Railway.	Number of Packages Tested.	Average Temperature.
				deg.
E. Lafreniere	St. Alexis de Montcalm	C.N.Q.R.	2	39·5
O. Fortier	St. Eulalie	I.C.R.	2	42·0
Pierre Proulx	St. Agathe de Lotbiniere	G.T.R.	8	42·8
F. X. Bellehumeur	Cavignac	C.P.R.	2	43·0
Eug. Coté	Isle Verte	I.C.R.	5	43·4
C. Godbout	St. Cyprien	I.C.R.	4	43·8
A. Massicotte	Joliette	C.N.Q.R.	2	44·0
P. Gauthier	St. Luc de Matane	I.C.R.	2	44·0
G. Marion	St. Damien	C.P.R.	2	44·5
B. Bergeron	St. Samuel	I.C.R.	2	45·0
E. Heon	St. Wenceslas	I.C.R.	2	45·5
Omer Hardy	St. Sylvere	I.C.R.	2	45·5
Ludger Lomothe	Clarenceville	Q.M. & S.	7	46·3
Société de Fleury	St. Judes	Q.M. & S.	2	46·5
A. A. Nicole	Trois Pistoles	I.C.R.	9	46·6
Francois Houle	St. Naraire	I.C.R.	2	47·0
T. Messier	St. Hélene de Bagot	I.C.R.	2	47·0
C. Godbout	Isle Verte	I.C.R.	4	47·3
A. Alarie	St. Jérome	C.N.Q.R.	2	47·5
G. Bennett (Hazel Bank)	New Glasgow	C.N.Q.R.	4	47·5
E. Dumas	St. Epiphanie	I.C.R.	6	47·7
Frs. Pelletier	Riviere Blanche	I.C.R.	2	48·0
D. Messier	St. Hélene de Bagot	I.C.R.	2	48·0
M. Pelletier	Joliette	C.N.Q.R.	2	48·0
Geo. Bennett (Elm Bank)	New Glasgow	C.N.Q.R.	4	48·3
Geo. Bennett (Oak Bank)	New Glasgow	C.N.Q.R.	2	48·5
Adolphe Charron	St. Liboire	I.C.R.	4	48·5
A. A. Nicole	St. Simon	I.C.R.	6	48·8
P. Belanger	Petit Matane	I.C.R.	2	49·0
David Chapdelaine	St. Germain de Grantham	I.C.R.	2	49·0
Pacifique Houle	St. Germain de Grantham	I.C.R.	2	49·0
W. H. Wilson	St. Sylvester West	G.T.R.	8	49·0
J. O. Nault	Portneuf	C.P.R.	5	49·4
Jos. Grenier	St. Rosalie	C.P.R.	4	49·5
A. Mercier	St. Patrice	G.T.R.	10	49·8
H. Mailhiot	St. Gertrude	I.C.R.	2	50·0
Forget & Parthenais	Bruchesi	C.P.R.	2	50·0
Eug. Godbout	St. Eloi	I.C.R.	4	50·0
Chs. Harvey	Amqui	I.C.R.	4	50·0
Jos. Lavasseur	Matane	I.C.R.	2	50·0
Clondonier Lussier	Rougemont	Q.M. & S.	2	50·0
F. X. Senay	St. Cessaire	C.P.R.	2	50·0
D. Metivier	L'Ange Gardien	C.P.R.	2	50·0
Albert Houle	St. Simon de Bagot	C.P.R.	2	50·0
J. Carpentier	Cavignac	C.P.R.	2	50·0
Alph. Masse	St. Agathe de Lotbiniere	G.T.R.	8	50·3
C. Godbout (W. 514)	Isle Verte	I.C.R.	4	50·3
E. Roy	St. Clement	I.C.R.	4	50·3
J. B. Theriault	St. Modeste	I.C.R.	6	50·3
W. Gareau	St. Jérome Crossing	C.N.Q.R.	4	50·5
M. Brault	Montcalm	C.N.Q.R.	4	50·5
A. Sevigny	St. Ursule	C.N.Q.R.	2	50·5
J. N. Parent	St. Sylvere	I.C.R.	2	50·5
E. Lefebvre	St. Hugues	C.P.R.	2	50·5
O. Bernier	St. Lin	C.P.R.	5	50·6
Ludger Rioux	Trois Pistoles	I.C.R.	7	50·7
L. Eluyer & Chaput	St. Elizabeth	C.N.Q.R.	9	50·7
Grenon & Frére	St. Bernabé	Q.M. & S.	5	50·8
M. Gauthier	St. Germain	I.C.R.	2	51·0
W. Deshaies	St. Sylvere	I.C.R.	2	51·0
Nap. Rivard	St. Paschal	I.C.R.	2	51·0
C. Thibault	St. Luc	I.C.R.	4	51·0
J. Chamberland	Sandy Bay	I.C.R.	5	51·0
T. St. Georges	St. Ambroise de Kildare	C.N.Q.R.	2	51·0
H. Leroux	St. Georges de Montcalm	C.N.Q.R.	2	51·0
E. Dion (E.D.)	St. Thomas de Joliette	C.P.R.	2	51·0
J. Descelles	St. Hélene de Bagot	I.C.R.	6	51·2
J. E. Larose	St. Lin	C.P.R.	4	51·3
H. Bergeron	St. Paulin	C.N.Q.R.	2	51·5
P. Allard	St. Alexis de Montcalm	C.N.Q.R.	2	51·5
P. Savoie	St. Nazaire	I.C.R.	4	51·5
P. Lavalle	St. Gabriel	C.P.R.	4	51·5
A. Deslandes	St. Liboire	G.T.R.	2	51·5
H. Lessard	St. Léon	C.N.Q.R.	6	51·5
D. Kerouack	St. Narcisse	G.T.R.	12	51·5
E. Dion (G. 618)	St. Thomas de Joliette	C.P.R.	4	51·5
Arcade Coupal	Henryville	Q.M. & S.	7	51·6
C. Godbout	St. Eloi	I.C.R.	4	51·8

AVERAGE TEMPERATURES OF BUTTER—*Concluded.*

Creamery.	Location.	Railway.	Number of Packages Tested.	Average. Temperature.
A. Drouin	St. Sophie	C.N.Q.R.	4	51·8
A. Lapointe	St. Paul de Joliette	C.N.Q.R.	6	52·0
H. Lapalme	Abbotsford	C.P.R.	2	52·0
E. Metivier	St. Cyrille de L'Islet	I.C.R.	2	52·0
A. Breton	St. Epiphanie	I.C.R.	6	52·0
J. A. Saindon	St. Arsène	I.C.R.	4	52·0
J. St. Pierre	St. Rosalie	C.P.R.	2	52·0
Amédée Casavant	St. Pie	C.P.R.	3	52·0
Amédée Lapalme	St. Hugues	C.P.R.	2	52·0
F. Paradis	St. Charles de Joliette	C.P.R.	2	52·0
Edouard Jean	St. Fabien	I.C.R.	10	52·3
T. Bergeron	St. Thomas de Joliette	C.P.R.	4	52·3
Theo. Beaulieu	St. Paul de Croix	I.C.R.	4	52·3
John April	St. Hubert	I.C.R.	4	52·3
Laporte & Frére	St. Ambroise de Kildare	C.N.Q.R.	5	52·4
I. Dion	St. Jérome	C.N.Q.R.	6	52·5
Jos. Beaulieu	St. Flavie	I.C.R.	2	52·5
D. Tetreault	Upton	G.T.R.	2	52·5
S. Comtois	St. Damien de Brandon	C.P.R.	6	52·5
A. Provost	St. Nazaire	I.C.R.	6	52·7
Honoré Charland	St. Simon	C.P.R.	3	52·7
W. Ferron	St. Léon	C.N.Q.R.	6	52·7
Couture & Frére	St. Sebastin	Q.M. & S.	5	52·8
E. Marchand	St. Gertrude	I.C.R.	2	53·0
Jos. C. Rioux	St. Flavie	I.C.R.	2	53·0
Stephen Benoit	Labelle	C.P.R.	2	53·0
Jos. Gaudet	St. Marie Salomée	C.N.Q.R.	2	53·0
Comtois & Mondor	St. Thomas de Joliette	C.N.Q.R.	2	53·0
Geo. Millar	Lisgar	G.T.R.	2	53·0
Jos. A. Desroches	St. Beatrix	C.P.R.	2	53·0
G. Roy	Montmagny	I.C.R.	4	53·0
A. Leclerc	St. Eugene de Grantham	I.C.R.	4	53·3
J. N. Ethier	St. Julienne	C.N.Q.R.	3	53·3
Jos. Marion	St. Jacques l'Achigan	C.N.Q.R.	2	53·5
Gilbert Brunette	St, Liboire	G.T.R.	2	53·5
André Brasseur	Emileville	C.P.R.	2	53·5
Frs. Hamel	St. Agapit	G.T.R.	10	53·6
S. Comtois (H. 69)	St. Damien	C.P.R.	6	53·8
J. A. McCallum	Danville	G.T.R.	4	53·8
Jos. Lemonde	St. Liboire	G.T.R.	4	53·8
O. Gelinas	St. Elie	C.N.Q.R.	4	53·8
D. Pelletier	Acton	G.T.R.	4	54·0
M. McDuff	Upton	G.T.R.	4	54·0
A. Lussier	St. Hélene	I.C.R.	4	54·0
O. Bellehumeur	St. Hélene	I.C.R.	2	54·0
A. Belzil	St. Mathieu	I.C.R.	7	54·0
F. Thibault	L'Islet Station	I.C.R.	2	54·0
Dauteuil & Deschenes	St. Jean de Dieu	I.C.R.	3	54·0
J. Dumas	St. Jean de Dieu	I.C.R.	5	54·0
O. Couture	St. Anaclet	I.C.R.	2	54·0
Jos. Gourre	L'Epiphanie	C.N.Q.R.	2	54·0
E. Lanthier	St. Augustin	C.P.R.	5	54·2
D. Guilbault	St. Gabriel de Brandon	C.P.R.	7	54·3
H. Lecomte	St. Theodore d'Acton	G.T.R.	4	54·3
W. St. Onge	Mount Johnson	Q.M. & S.	3	54·3
Riverside Creamery	St. Basile	C.P.R.	10	54·4
U. Roy	St. Elizabeth	C.N.Q.R.	5	54·4
L. Lussier	St. Hélene	I.C.R.	4	54·5
Frs. Robitaille	St. Damien de Brandon	C.P.R.	6	54·5
A. L. Heureux	St. Norbert	C.P.R.	6	54·5
L. A. Boucher	L'Islet	I.C.R.	2	54·5
J. Perron	St. Blandine	I.C.R.	2	54·5
Jos. Anctil	Riviere Blanche	I.C.R.	2	54·5
J. Jodoin	St. Theodore d'Acton	G.T.R.	4	54·5
Syndicat d'Upton	Upton	G.T.R.	4	54·5
J. L. Girard	St. Angéle	Q.M. & S.	5	54·6
N. St. Louis	St. Ursule	C.N.Q.R.	2	55·0
O. Mercier	St. Charles de Bellechasse	I.C.R.	2	55·0
E. Dion (A. C.)	St. Thomas de Joliette	C.P.R.	2	55·0
S. Pellerin	St. Beatrice	C.N.Q.R.	2	55·0
P. Theriault	St. Alphonse de Joliette	C.N.Q.R.	2	55·0
H. Prevost	L'Epiphanie	C.N.Q.R.	2	55·0
M. E. Tremblay	Clarenceville	Q.M. & S.	7	55·0
I. Paradis	St. Gabriel de Brandon	C.P.R.	11	55·2
A. Rainville	St. Gabriel de Brandon	C.P.R.	7	55·3
H. Lafrance	St. Joseph	C.P.R.	4	55·3
G. Beaulojeil	St. Alexis de Montcalm	C.N.Q.R.	4	55·3
A. Gaudreau	Trois Sammons	I.C.R.	2	55·5
Marceau & Corriveau	St. Vallier	I.C.R.	2	55·5
Jos. Tremblay	St. Félicité	I.C.R.	2	55·5

AVERAGE TEMPERATURES OF BUTTER—*Continued.*

Creamery.	Location.	Railway.	Number of Packages Tested.	Average. Temperature.
N. Demers	St. Giles	G.T.R.	7	55·6
L. P. Paradis	St. Raphael	I.C.R.	4	55·8
Boisvert & Gauthier	Terrebonne	C.P.R.	2	56·0
D. Brodeur	L'Ange Gardien	C.P.R.	1	56·0
Frs. Roy	Mount Carmel	I.C.R.	2	56·0
J. D. Blanchet	Elgin Road	I.C.R.	2	56·0
Louis Belanger	St. Jean Port Joli	I.C.R.	2	56·0
Wilfrid Malo	St. Paul de Joliette	C.N.Q.R.	2	56·0
J. A. Allaire	St. Roch l'Achigan	C.N.Q.R.	2	56·0
S. Simard	St. Agathe	C.P.R.	2	56·0
Georges Vachon	St. Valarien	G.T.R.	2	56·0
Syndicat St. Jean Port Joli	St. Jean Port Joli	I.C.R.	2	56·0
J. N. O. Fournier	St. Magloire	I.C.R.	3	56·0
P. Savoie	Upton	G.T.R.	5	56·4
N. Lussier	Acton	G.T.R.	5	56·4
Dr. Dubé	St. Sylvestre East	G.T.R.	2	56·5
L. J. A. Robillard	Laurence	C.N.Q.R.	2	56·5
M. Boucher	St. Mélanie	C.N.Q.R.	2	56·5
E. Dion (L. C. 81)	St. Thomes de Joliette	C.P.R.	4	56·8
F. Provost	Acton	G.T.R.	7	56·9
E. Descelles	St. Theodore d'Upton	G.T.R.	5	57·0
H. Paquette	Upton	G.T.R.	4	57·0
E. Blais	St. Pierre Station	I.C.R.	4	57·0
Emille Maurice	St. Valerien	G.T.R.	2	57·0
Boucher & Mercier	St. Francis de Montmagny	I.C.R.	2	57·0
Z. Gauthier	Mascouche	C.P.R.	2	57·0
J. A. Ratté	St. Paul, Montmagny	I.C.R.	2	57·0
A. Michaud	Rimouski	I.C.R.	2	57·0
Pierre Langlois	St. Angele de Rimouski	I.C.R.	2	57·0
Geo. Bennett (Green Bank)	New Glasgow	C.N.Q.R.	2	57·0
T. Nicole	St. Paul de Montmagny	I.C.R.	4	57·3
J. O. Nault	St. Bazile de Portneuf	C.P.R.	5	57·6
N. Dion	St. Canute	C.N.Q.R.	4	57·8
J. Fleury	St. Léon	C.P.R.	4	57·8
C. Guitard	St. Joseph	C.P.R.	4	58·0
Euclide Thinel	St. Calixte	C P.R.	4	58·0
Edmond Belanger	Cap St. Ignace	I.C.R.	2	58·0
J. B. St. Pierre	St. Philippe de Nery	I.C.R.	2	58·0
F. Caron	St. Jean Port Joli	I.C.R.	2	58·0
J. Bernier	St. Cyrille de L'Islet	I.C.R.	2	58·0
J. Dupont	St. Hélene	I.C.R.	2	58·0
J. A. Charrier	Buckland	I.C.R.	2	58·0
D. Lorraine (St. J.)	St. Janvier	I.C.R.	2	58·0
C. Gravel	L'Assomption	C.P.R.	6	58·2
P. Kerouack	St. Eugene de L'Islet	I.C.R.	2	58·5
Luc Bellemare	St. Barnabé	C.N.Q.R.	4	58·5
E. Dion (D. I.)	St. Thomas de Joliette	C.P.R.	2	58·5
Wm. Girard	Acton	G.T.R.	4	59·0
E. Dubé	Cabane Ronde	C.P.R.	2	59·0
A. A. Nicole	St. Cyprien	I.C.R.	3	59·0
L. Belanger	St. Damien	I.C.R.	2	59·0
M. Moody & Sons	Terrebonne	C.P.R.	2	59·0
J. Ratelle	St. Paul de Joliette	C.N.Q.R.	2	59·0
A. Davis	Christieville	C.P.R.	2	59·0
Hardy Fréres & Cie	Pont Rouge	C.P.R.	10	59·3
M. Vezina	Cap Sante	C.P.R.	4	59·3
J. W. Campton	Shawbridge	C.P.R.	6	59·3
O. Cardinal	St. Roch l'Achigan	C.P.R.	4	59·3
E. Brosseau (E. B. S)	St. Adele	C.P.R.	6	59·3
J. G. Heroux	Terrebonne	C.P.R.	4	59·5
D. Loraine	St. Janvier	C.P.R.	2	59·5
Boisvert & Domaine	Caxton	C.P.R.	2	59·5
Vezina & Mathe	Cap Sante	C.P.R.	4	60·0
G. Fournier	Montmagny	I.C.R.	2	60·0
Aug. Pelletier	St. Roch des Aulnaics	I.C.R.	2	60·0
C. S. Painchaud	St. Michel de Bellechasse	I.C.R.	2	60·0
Eugene Chorelle	L'Epiphanie	C.N.Q.R.	2	60·0
Eustache Menard (1374)	L'Anse à Giles	I.C.R.	2	60·0
Emile Larin	Petite Riviere	C.P.R.	5	60·2
E. E. Wallace	St. Lin	C.P.R.	7	60·3
H. Lacasse	St. Agathe	C.P.R.	6	60·5
Roch Gamache	St. Calixte	C.P.R.	4	60·5
L. E. Cote	Montmagny	I.C.R.	2	61·0
Ludger Lecomte	St. Francois de Montmagny	I.C.R.	2	61·0
Xavier Blanchard	St. Hyacinthe	G.T.R.	2	61·0
E. Boulet	St. Vallier	I.C.R.	2	61·0
Z. Cloutier	St. Pierre, Riv. du Sud	I.C.R.	2	61·0
E. Cote	St, Pierre, Riv. du Sud	I.C.R.	2	61·0
Thos. Lacerte	St. Sévere	C.P.R.	2	61·5
H. Lacasse	St. Marquerite	C.P.R.	6	61·5

AVERAGE TEMPERATURES OF BUTTER—*Continued.*

Creamery.	Location.	Railway.	Number of Packages Tested	Average Temperature.
				deg.
Jos. Rocheleau	St. Didace	C.P.R	2	61·5
J. J. Beauregard	St. Lin	C.P.R	2	61·5
O. Bononival	St. Barnabé	C.N.Q.R	2	61·5
Eustache Menard	L'Anse à Giles	I.C.R	2	61·5
Joseph Shaw	Lesage	C.P.R	6	61·8
Philippe Gelinas	Charette Mills	C.N.Q.R	2	62·0
I. Thouin	St. Agathe des Monts	C.P.R	6	62·3
Thos. Binette	Chicot	C.P.R	4	62·5
P. Lavergne	Grand Freniere	C.P.R	4	62·5
Jos. Guilbault	Mascouche	C.P.R	4	62·8
Hardy, Frères & Cie	St. Bazile	C.P.R	4	63·0
Jos. Beaudoin	Cabane Ronde	C.P.R	2	63·0
N. Heureux	St. Barnabé	C.N.Q.R	2	63·0
E. Brosseau (E. B. 7)	St. Adele	C.P.R	6	63·2
J. B. Sansregret	St. Paul de Joliette	C.P.R	4	63·3
J. A. Milot	Louiseville	C.P.R	2	63·5
E. Brosseau	St. Sauveur des Monts	C.P.R	4	63·5
Albert Corriveau	St. Boniface	C.N.Q.R	2	63·5
E. Brosseau	Piedmont	C.P.R	6	64·0
E. Brosseau (E. B. 6)	St. Jérome	C.P.R	6	64·2
H. Lacasse	St. Lucie	C.P.R	4	64·3
A. Legare	St. Hippolite	C.P.R	4	64·5
J. Guertin	St. Liboire	G.T.R	2	65·0
O. Gendron	Yamachiche	C.P.R	5	65·2
Gregoire Belanger	St. Sauveur des Monts	C.P.R	4	65·3
Dionin Milot	Yamachiche	C.P.R	4	65·5
A. Milot	Yamachiche	C.P.R	4	66·0
E. Brosseau (E. B. 5)	St. Jérome	C.P.R	4	66·0
W. Pellerin	St. Boniface	C.N.Q.R	2	66·0
E. Brosseau (E. B. 4)	St. Jérome	C.P.R	4	66·3
J. A. Paquin	Louisville	C.P.R	2	68·0
J. B. St. Pierre	Lesage	C.P.R	2	68·0
C. Robinson	Mascouche	C.P.R	2	68·0

The foregoing table shows that in the season of 1907 thirty-five of the creameries tested shipped their butter at an average temperature under 50 degrees, as compared with eleven in 1906 and none in 1905. In 1907 the lowest average was 39·5 degrees, highest 68 degrees; in 1906 the lowest was 42·4 degrees and the highest 68 degrees; in 1905 the lowest was 51·1 degrees and the highest 67·7 degrees.

As already stated, special marks were placed by the travelling inspectors on a few of the packages of butter tested by them at the railway stations and these packages were again tested at Montreal, in order to ascertain if the butter had become cooler or warmer while in the car. These tests have been carefully calculated and the average temperatures worked out as shown in the following table:—

SEASON OF 1907.

	No. of Cars with Marked Packages.	Number of Marked Packages Tested at Shipping Points and at Montreal.	Average Temperature at Shipping Points.	Average Temperature at Montreal.	Increase in Temperature	Reduction in Temperature
			Deg.	Deg.	Deg.	Deg.
Ontario via C.P.R.	2	15	69·1	61·2	.....	7·9
" " G.T.R.	13	87	60·4	55·6	.....	4·8
Quebec (north of St. Lawrence) via C.P.R.	11	157	51·6	49·6	.....	2·0
Quebec (south of St. Lawrence) via C.P.R.	19	224	47·7	48·9	1·2	.....
Quebec via G.T.R.	17	192	49·0	53·7	4·7	.....
" " I.C.R.	9	142	50·4	50·4	.....	.....
" " Q.C.R.	3	62	51·6	51·4	.....	0·2
" " C.V.R.	3	44	50·0	54·9	4·9	.....
" " Q.M. & S.	4	32	51·8	51·9	0·1	.....
" " C.N.Q.R.	5	92	51·7	49·9	.....	1·8
Totals	86	1,047				
General average	.....	.....	51·3	50·5	.....	0·8
Season, 1906, gen'l average	.....	.....	52·6	53·2	0·6	.....
" 1905 "	.....	.....	54·4	54·5	0·1	.....

During the season the two inspectors stationed at Montreal inspected and reported upon 1,044 cars, giving the number of packages of butter in each car, the weight, the number of packages tested and the average temperature of each. Their work is summarized in the following table:—

———	Cars.	Packages.	Lbs.	Tests.	Average Temperature	Average Quantity of Ice per Car.
					Deg.	Lbs.
C. P. R.	447	100,096	6,270,712	1,760	51·7	514
G. T. R.	265	55,440	3,576,107	1,233	53·9	515
I. C. R.	83	32,317	2,074,156	440	51·0	1,275
C. V. R.	82	17,111	1,067,708	316	54·0	461
C. N. Q.	94	14,921	1,029,474	553	51·3	377
Q. C. R.	34	8,239	578,383	166	50·8	520
Q. S. R.	39	6,487	412,475	144	52·6	637
	1,044	234,605	15,009,015	4,612	52·0	.....

IMPROVED PORT FACILITIES AT MONTREAL.

Several of the new freight sheds were in use for the first time last season and were a great improvement over the old wooden sheds, which necessarily were of temporary construction as they had to be removed at the close of navigation each year on account of the danger from ice in the spring. The new sheds are built on what is called the 'high level piers,' that is on a level with Common and Commissioner streets, and are permanent structures of steel and concrete. They are two stories high and at the time of writing seven have been completed, with as many more under way. The upper story in each shed will accommodate cargo for two steamers, so that when all the sheds are finished it will be possible to have on hand, when navigation opens, cargoes for twenty-eight ships with ample room on the lower floors to handle the inward

cargoes. Both floors are of concrete. Railway tracks are laid along one side of each shed so that freight can be removed directly from the cars to the sheds instead of having to be carted a considerable distance as was the practice in the past.

A seventy ton floating derrick which can be operated in any part of the harbour will be provided to handle heavy freight and the docks will be equipped with unloading cranes which can be moved in either direction.

Previous to last season each railway company handled its own cars on the harbour front, but last year the new Harbour Board organized a general traffic office to look after the movement of all freight on the wharves. The railway companies turned over the cars to the officer who had charge of this work and he moved them as required. A further improvement contemplated is elevated tracks which would leave the driveways free for foot and vehicle traffic.

When all the new sheds are completed the stevedores will be able to carry on their work to much better advantage and our inspectors will be in a position to ask for a still greater degree of care in the handling of perishable goods.

IMPROVED PORT FACILITIES IN GREAT BRITAIN.

When this department first undertook to inspect the condition of our food stuffs when landed at the principal old country ports the facilities there were vastly different from what they are to-day. At London our butter was delivered to lighters miles down the river, and our cheese at Tilbury Dock, from where they were railed to Commercial Road Station and thence carted to destination. This meant that the cheese were handled five times in thirty-five miles, resulting in great damage to boxes and exposure to heat. Something over two years ago all this was changed and since then our butter and cheese have been discharged at the Surrey Commercial Dock, which is within two miles of Tooley Street, the centre of the dairy produce trade in London. At this dock the butter is delivered direct into a cold storage chamber and the cheese and bacon into cooled air rooms.

Until last season conditions at Liverpool were very unsatisfactory. Our butter was discharged from the steamships into freight sheds on the docks, where it remained in some cases for days before it was removed. Since 1903 our department has been endeavouring to have better facilities provided, and last year our efforts bore fruit, as the Canadian Pacific Railway Company erected a cold storage warehouse of four chambers with a total capacity of 60,000 cubic feet on the dock where their steamers are berthed and in future, as far as the Canadian Pacific Railway line is concerned, the facilities at Liverpool will be similar to those afforded at the Surrey Commercial Dock, London.

At Avonmouth, the port of Bristol, our butter is handled with good dispatch, but at Glasgow I regret to say conditions are not so satisfactory, and there is little prospect of any immediate improvement.

CARGO INSPECTION ON MONTREAL DOCKS.

At the commencement of the season of navigation in 1907, the following letter was sent to each of the steamship agents at Montreal:—

OTTAWA, May 6, 1907.

DEAR SIRS,—I beg to inform you that this department will continue the work of cargo inspection at the Montreal docks during the coming season along lines similar to those followed in former years. Mr. Wm. Macfarlane will again be in charge of the cargo inspectors and will have his office in the Custom House building as heretofore. The duties of the inspectors will be to report the condition of all perishable products when loaded into the steamers,

the kind of handling these products receive, the parts of the ship in which they are stowed, &c.

Thermographs will also be placed in the cold storage and cooled air chambers and in the ordinary holds with apples and cheese. As soon as these temperature records are received here from the other side copies will be made and forwarded to your office, and copies will also be furnished the chief engineers of the steamships concerned. Tests will also be made of the temperature of the butter when delivered to your ships, and a list of these temperatures handed to the chief engineer before the steamer sails. Special attention will be paid this year to the loading and unloading of perishable goods by carters, as we think there is room for considerable improvement in their work.

I believe that your company appreciates the value of this inspection work, and I take this opportunity of thanking you on behalf of this department for the courtesy with which your dock superintendents and other officials have treated our inspectors in the past and for the support they have given them in their work. This season I trust the same cordial relations will exist between your dock officials and our inspectors.

Yours truly,
(Sgd.) W. W. Moore,
Chief, Markets Division.

During the season our cargo inspectors closely supervised the handling of perishable freight both in the freight sheds and in the ships, and made full reports on all cargoes shipped during the period of navigation. When the apple-shipping season opened one inspector was detailed to look after the unloading of the cars and he did good work in reporting cases of rough handling by the carters. We submitted reports to the superintendents of the Shedden Forwarding Company and the Dominion Transportation Company, who thereupon notified their teamsters that apples must be handled with the greatest possible care.

As the carters who haul the cheese from the warehouses of the exporters to the docks are often responsible for the breakage of a number of boxes while unloading their teams in the freight sheds, I instructed the inspectors last season to immediately notify the office of the shipper concerned, by telephone, whenever they found a carter unloading his cheese roughly. The same course will be followed this season and if our complaints are promptly followed up by the shippers cases of rough handling by the carters will soon become few and far between.

We continued last season to inspect the discharge of cheese and butter from the river boats at Montreal and found the usual tendency in some of the boats to load dairy produce close to the engine room, where it was liable to become heated. Owing to the efforts of our inspector, however, this practice is being gradually discontinued.

CARGO INSPECTION AT QUEBEC AND HALIFAX.

A cargo inspector was present each time the Empress steamers were loaded at Quebec and one was stationed at Halifax during the winter months to look after the loading of apples and to place thermographs in the steamers carrying fruit. Copies of all thermograph records of temperatures obtained in the Halifax boats were sent to the secretary of the Nova Scotia Fruit Growers' Association and to the interested steamship agents in Halifax.

CARGO INSPECTION IN GREAT BRITAIN.

In Great Britain we maintain a staff of five cargo inspectors the year around, covering the ports of Bristol, Glasgow, Liverpool, London and Manchester. These men

are on hand while Canadian cargoes are being discharged, and report the condition of the different products. They also test the temperature of the marked packages of butter and remove the thermograph records, which they mail at once to Ottawa.

THE EXPORT BUTTER TRADE.

In the season of 1907 the exports of butter from the port of Montreal showed a great decrease, being only 66,773 packages against 361,400 packages in 1906 and 554,041 packages in 1905. As a consequence of this great shrinkage in our exports the cold storage accommodation in the steamers last season was not used to anything like its capacity, but a splendid service was nevertheless maintained by the different steamship companies.

In order to show the comparative temperatures for the past three years of butter when delivered to the steamers at Montreal and when landed at the port of discharge in Great Britain, the following table is submitted:—

MONTREAL TO LIVERPOOL.

	No. of Packages Tested.	Average Temperature at Montreal.	Average Temperature at Port of Discharge.	Average Reduction in Temperature by Ships' Refrigerators.
		Deg.	Deg.	Deg.
Season 1905	843	39·3	24·9	14·4
" 1906	456	39·2	21·4	17·8
" 1907	183	33·7	23·1	10·6

MONTREAL TO LONDON.

Season 1905	859	40·2	26·6	13·6
" 1906	527	41·7	20·5	21·2
" 1907	217	36·2	15·3	20·9

MONTREAL TO BRISTOL.

Season 1905	607	36·9	23·9	13·0
" 1906	361	36·9	23·9	13·0
" 1907	186	35·4	22·9	12·5

MONTREAL TO GLASGOW.

Season 1905	403	35·8	28·7	7·1
" 1906	374	35·0	24·1	10·9
" 1907	183	35·9	19·2	16·7

MONTREAL TO MANCHESTER.

Season 1905	87	34·4	30·4	4·0
" 1906	33	41·2	38·8	2·4
" 1907	7	40·9	34·0	6·9

It will be noticed that last season, with one exception, the butter was delivered to the steamers at a lower temperature than in previous years and that it was discharged at the ports of London, Bristol, Glasgow and Manchester at a lower temperature than heretofore.

Our Liverpool cargo inspector in his annual report for the year 1907, refers as follows to the trade in Canadian butter:—

'There has been very little butter shipped to this port during the past season, but it has been in good order and condition. There was a great improvement in taking butter from the quay last season, but there is still room for further improvement in that respect. This should come about next season for there are now plenty of cold stores near the quay and the Canadian Pacific Railway have finished their own cold store. There is still a large percentage of butter coming forward without sacking on the box or tub, and this is a serious mistake, as all butter should be sacked. Butter has been carried at a very low temperature during the last season and has been well looked after generally by the steamship companies.'

Under date of January 31, 1908, our Glasgow inspector made the following comments regarding Canadian butter imports for the season of 1907:—

'The imports of Canadian butter were exceedingly small, being barely 6,000 packages, as compared with over 28,000 during 1906.

'The bulk of the butter was of very fair quality, some being very choice, and gave great satisfaction, the only drawback being that the state of the butter market did not permit of merchants importing Canadian on a profitable basis. I observed one or two parcels which were of too deep a colour and these I afterwards learned were railed to the northeast coast of England, where a deeper shade of colour is demanded than that popular in the Glasgow trade.

'The condition on arrival of imports was good, the shipping companies maintaining a lower temperature in their refrigerators than last season, ranging from 10 to 20 degrees for the bulk, a few only being above these figures. The majority of the packages were sacked, quite 64 per cent being so.

'Still considerable delay in taking delivery from the docks is manifested by some consignees. Of the total imports 1,362 packages lay for 2 days, 192 for 3 days, 673 for 4 days, 22 for 5 days, 65 for 6 days, 93 for 7 days and 100 for 9 days, the latter rising in temperature from 10 to 53 degrees. Other than this total of 2,705 packages the remainder was either lifted the date of discharge or the day following.'

The average price in London for Canadian creamery butter for the seven months, May to November, was 110 shillings, with an average in the Bristol market for the same period of 115 shillings. Since the first of the year almost a butter famine has been experienced in Great Britain owing to the tremendous falling off in imports, chiefly from Australia, the shortage in imports for the year ending March 31 amounting to 4,414 tons compared with the previous year.

The following table shows the average price each week in the London market for Danish, Russian, Australian, New Zealand and Argentine butter for the period from November 28 to March 26.

Week Ending.	Danish. Cwt.	Russian. Cwt.	Australian. Cwt.	New Zealand. Cwt.	Argentine. Cwt.
	s.	s.	s.	s.	s.
December 5th	123	110	117	120	.....
" 12th	123	110	117	120	.....
" 19th	124	110	118	120	.....
" 26th	125	112	118	120	.....
January 2nd	125	112	118	120	.....
" 9th	125	112	118	120	114
" 16th	126	112	116	120	.....
" 23rd	126	112	118	120	.....
" 30th	126	112	118	120	118
February 6th	128	120	126	128	.....
" 13th	142	130	140	142	140
" 20th	153	146	152	154	150
" 27th	140	128	140	142	136
March 5th	126	116	120	120	120
" 12th	127	116	122	124	120
" 19th	122	116	118	120	120
" 26th	120	113	110	114	.....

The following table shows the quantities of butter imported into the United Kingdom, from the countries named, for the years 1900 to 1907, inclusive, together with the percentage received from each country each year during the period named. It will be observed that the imports increased by 837,919 cwts. in seven years, and that this increased quantity was practically supplied by Russia, Australia and New Zealand, the former country supplying 15·6 per cent in 1907 against 6·2 per cent in 1900.

BUTTER IMPORTS INTO THE UNITED KINGDOM.

From British Trade Returns, Years ended December 31st.

From	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Russia	209,738	378,452	490,091	484,328	404,717	461,140	606,549	657,649
Sweden	196,041	180,212	191,591	212,232	206,791	188,209	182,803	226,740
Denmark	1,486,342	1,597,186	1,703,032	1,771,654	1,708,619	1,630,363	1,675,761	1,818,811
Germany	36,042	26,983	26,375	12,507	4,080	5,372	10,701	7,297
Netherlands	282,805	298,912	393,261	343,761	252,262	209,897	195,366	168,496
France	322,048	311,601	414,240	454,088	371,061	348,442	319,401	281,306
United States	56,046	150,126	54,458	42,405	68,754	84,874	157,312	1,063
Australia	353,157	248,168	80,397	121,165	480,778	450,293	545,827	587,923
New Zealand	163,871	167,343	157,993	249,879	294,982	300,418	311,672	313,863
Canada	138,313	215,588	285,765	185,437	268,607	292,117	190,968	34,753
Other countries	134,113	128,319	177,730	183,238	180,354	176,741	140,898	118,534
Total	3,378,516	3,702,890	3,974,933	4,060,694	4,241,005	4,147,866	4,337,258	4,216,435
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Russia	6·2	10·2	12·3	11·9	9·5	11·1	14·1	15·6
Sweden	5·9	5·1	4·8	5·2	4·9	4·5	4·2	5·4
Denmark	43·9	43·1	42·8	43·4	40·3	39·3	38·6	43·1
Germany	1·1	0·7	0·6	0·3	0·1	0·1	0·3	0·2
Netherlands	8·4	8·1	9·9	8·5	5·9	5·1	4·5	4·0
France	9·5	8·4	10·4	11·2	8·7	8·4	7·1	6·7
United States	1·7	4·0	1·4	1·1	1·6	2·0	3·6	.....
Australia	10·4	6·7	2·2	3·2	11·3	10·8	12·5	13·9
New Zealand	4·9	4·5	3·9	6·1	6·9	7·5	7·2	7·5
Canada	4·1	5·8	7·2	4·6	6·3	7·0	4·4	0·8
Other countries	3·9	3·4	4·5	4·5	4·5	4·2	3·5	2·8
Total	100·	100·	100·	100·	100·	100·	100·	100·

THE EXPORT CHEESE TRADE.

The exports of Canadian cheese for the year ended March 31, 1908, amounted to 189,710,463 lbs., valued at $22,887,237. These figures show a considerable decrease over those of the previous year. The shrinkage in the exports was caused by the reduced make, due to an unfavourable season, but on the whole the quality was good and high prices were realized throughout the year. Following are the figures showing the quantity and value of cheese exported in the years ended March 31, 1904, 1905, 1906, 1907 and 1908:—

Year ended March 31st.	Lbs.	Value.
1904	242,432,366	$25,975,998
1905	216,080,606	19,969,363
1906	214,438,960	23,679,419
1907	213,614,643	26,160,856
1908	189,710,463	22,887,237

Practically no complaints were received from Liverpool, London or Bristol regarding the quality and condition of the cheese and fewer complaints than usual regarding

broken boxes. With respect to the Glasgow market our inspector there in his review of the season writes as follows:—

'The quality generally has been fairly satisfactory, but the early season's cheese came to hand in a very green state and occasioned much loss through extraordinary shrinkage in weight. This circumstance was so much felt in the early season by importers as to determine several to leave the Canadian article severely alone, and similarly retail shopkeepers refused to trade in them. The loss of weight in the cheese when cut in their stores was too pronounced to permit of trading in them at a reasonable profit.'

'The arrivals this season showed a higher percentage of broken boxes than those of last, due apparently in some cases to the use of not sufficiently seasoned wood in the manufacture, and bad boxing, viz.:—A large number of boxes were badly fitted, being both too wide and often too short. The shipments from several factories continued weekly to arrive with 30 or 50 per cent of the boxes broken. Of such were the "Monalea," "Apsley," and "Faraday" factories. A few others commenced badly, but I am glad to report improved throughout the season. The importance of strong and well fitting boxes cannot be too forcibly commended, as intended buyers are always impressed with the appearance of the boxes, and after reaching Glasgow the boxes may be railed several hundred miles.'

CHEESE IMPORTS INTO THE UNITED KINGDOM FROM BRITISH TRADE RETURNS, YEARS ENDED DECEMBER 31ST.

From	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Canada.....	1,511,872	1,547,739	1,709,565	1,848,142	1,900,556	1,858,767	1,925,835	1,698,847
United States..	680,583	540,102	390,479	360,916	224,830	175,256	233,425	114,300
Holland.....	327,382	315,923	284,020	302,503	233,601	214,033	229,343	241,553
New Zealand...	77,617	79,094	51,875	56,339	84,947	78,626	126,216	192,301
Other countries.	108,424	103,979	110,273	126,458	110,363	116,000	123,957	125,234
Total.....	2,705,878	2,586,837	2,546,212	2,694,358	2,554,297	2,442,682	2,638,776	2,372,235
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Canada.....	55·8	59·8	67·2	68·6	74·4	76·1	73·0	71·7
United States...	25·1	20·9	15·3	13·4	8·8	7·2	8·8	4·8
Holland.....	12·0	12·3	11·2	11·2	9·1	8·7	8·7	10·2
New Zealand...	2·9	3·0	2·0	2·1	3·3	3·2	4·8	8·1
Other countries.	4·2	4·0	4·3	4·7	4·4	4·8	4·7	5·2
Total.....	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0

The above figures for 1907 show the smallest importation of cheese into the United Kingdom during the past eight years, caused probably by the very greatly increased make of home cheese and a lessened consumption due to high prices.

THE EXPORT BACON TRADE.

The following table, showing bacon imports into the United Kingdom for the years 1900 to 1907 inclusive, together with the percentage supplied by the different countries in those years, is of interest chiefly in showing the strides made by both Denmark and Canada in the export bacon trade; Denmark increasing her exports from 19·4 per cent in 1900 to 33·6 per cent in 1907, while Canada advanced from 9·4 per cent to 22·4 per cent in the same time. During the eight year period the total quantity imported annually shows very little variation.

BACON IMPORTS INTO THE UNITED KINGDOM FROM BRITISH TRADE RETURNS, YEARS ENDED DECEMBER 31st.

From	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Denmark.....	1,094,626	1,060,909	1,255,627	1,496,101	1,723,884	1,471,687	1,463,880	1,806,934
United States...	3,956,527	4,244,329	3,283,855	2,893,507	2,806,108	2,755,233	2,775,919	2,280,644
Canada.....	529,864	398,697	462,487	665,249	829,883	1,191,390	1,190,524	1,192,401
Other countries.	60,221	68,413	87,735	102,131	92,436	80,650	112,299	85,626
Total.....	5,641,238	5,772,348	5,089,704	5,156,988	5,452,311	5,498,960	5,542,622	5,365,605
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Denmark.....	19·4	18·4	24·7	29·0	31·7	26·8	26·4	33·6
United States...	70·1	73·5	64·5	56·1	51·5	50·1	50·1	42·5
Canada.....	9·4	6·9	9·1	12·9	15·1	21·7	21·5	22·4
Other countries.	1·1	1·2	1·7	2·0	1·7	1·4	2·0	1·5
Total.....	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0

THE EXPORT APPLE TRADE.

The export apple trade for the season of 1907-8 was the greatest on record, the exports for the year ending March 31 amounting to 1,629,400 barrels, valued at $4,823,645. The season of 1903-4 had been the leader previously, but is now in second place as the following figures show:—

EXPORTS OF APPLES.

Year ended March 31st.	Brls.	Value.
1904	1,577,285	$4,529,500
1905	997,488	2,551,474
1906	1,280,789	4,217,704
1907	998,618	2,702,623
1908	1,629,400	4,823,645

Owing to the partial failure of the apple crop in many portions of the United States a very considerable quantity of the early apples grown in Ontario were shipped to Chicago and other western cities, and on account of this movement the shipments of early apples to Great Britain were less than would otherwise have been the case.

SHIPMENTS BY PORTS.

The bulk of the apples exported were shipped through the following ports:—

	Barrels.
Montreal, to end of November	614,110
Halifax, to end of March	367,175
Portland, to end of March	271,111
St. John, N.B., to end of March	71,079

The balance of the exports went by way of Boston and New York.

FROSTED SHIPMENTS.

During the months of December and January the weather was comparatively mild, but very severe frost was experienced during February and the first part of March, which caused damage to apple shipments while in transit from Ontario points to the seaboard. Up to January 25 thirteen cars were reported as containing more or less frosted apples when delivered to the steamship at Portland, while between that date and March 7 sixty-five cars were so reported. These seventy-eight cars contained 13,206 barrels of apples (all of which, of course, would not be frosted), or 5·96 per cent of the total quantity shipped during that period.

According to my reports no frosted apples were received at Halifax, while the Dominion fruit inspector at St. John estimates that 2,715 barrels of frosted apples ex. cars from Ontario points were delivered to the steamers at that port during the season.

HANDLING OF APPLES.

Montreal.—The apples were fairly well handled at Montreal the past season, and when all the new freight sheds are completed the facilities for prompt yet careful handling will be greatly improved.

Halifax.—We had a cargo inspector at Halifax during the apple shipping season, and at its close he reported as follows:—

'I find the handling of apples very satisfactory; the apples are rolled from the cars to the hatchways and the greatest trouble I have had is keeping the shed floors clean. I have insisted, however, that the shed floors should be kept covered with clean sawdust so that the fruit would arrive at its destination in clean packages. I have found in a few cases very dirty barrels; these must have been dirty on leaving the packing houses, as I was present when they were taken from the cars and found the cars clean. The D. A. Ry. carry most of the fruit from the packing houses to the steamers and in most cases I found the cars in good condition.

'Most of the apples are handled at night. Special trains are started out in the morning and arrive at the port in the evening, and the apples are taken from the cars as quickly as possible and loaded on the steamers, very often the handlers working all night.

'The barrels are made of strong spruce and fir staves with six shaved birch hoops, and it is very seldom we see a barrel broken.

'Most of the apples shipped from this port are carried by the Furness Withy S.S. Co., and I find them very careful in handling and stowing, and they are always willing to give any information required.

'The C. P. R. and Allan Steamship Companies carry a few apples, and I find their work satisfactory.'

Portland.—This department does not carry on any inspection work at Portland, but the writer generally visits that port once each year. On my last trip, about the first of February, 1908, I found as usual good facilities for the transfer of apples from the cars to the steamers; but the apples were not handled so carefully as at Montreal and Halifax. In view of the fact that there has never been a cargo or fruit inspector stationed at Portland and that there is only the ordinary supervision of the railway and steamship officials to prevent rough handling, it is not to be wondered at that the comparison should be in favour of the two ports mentioned, where, for some years past, this department has carried on, by means of cargo inspectors, a campaign for the better handling of perishable goods.

St. John.—A Dominion fruit inspector was on duty at the port of St. John, N.B., during the winter season, and he reported that the transfer of the apples from the cars to the steamers was carefully carried out under his immediate supervision.

TENDER FRUITS.

With respect to the exports of tender fruits from Canada in the season of 1907-8, the annual report of our cargo inspector at Glasgow makes the following reference to pears and tomatoes:—

'The shipments of pears from Canada were on a reduced scale from last season, but Duchess and Anjou were of fine quality and where carried in cold storage were landed in excellent condition. One or two of the later arrivals of Keiffers carried by ordinary storage were over-ripe on arrival and inclined to slight waste.

'Several trial shipments of tomatoes arrived per cold storage, but came to hand in a somewhat unsatisfactory state, generally a large number per box being soft and inclined to waste. Better results might be obtained by shipping them smaller and greener than packed this season, though I fear in a normal year there does not appear to be much prospect of a profitable trade in importation of the Canadian article to this market from August onwards, as it is then well supplied with the Scotch and English grown tomatoes.'

In concluding this report I take pleasure in stating that the inspectors on the staff of this division discharged their duties faithfully and that their work generally was satisfactorily performed.

I have the honour to be, sir,

Your obedient servant,

W. W. Moore,

Chief, Markets Division.

Montreal Harbour from G. T. R. Elevator.

REPORT

OF THE

DAIRY AND COLD STORAGE COMMISSIONER

FOR THE

FISCAL YEAR ENDING MARCH 31

1908

PART V.—COLD STORAGE DIVISION.

TABLE OF CONTENTS.

Creamery Cold Storages—Iced Car Services—Ocean Cold Storage—List of Steamers with Cold Storage Accommodation—Subsidies for Cold Storage Warehouses—Cold Storage Warehouses in Canada—Cold Storage of Eggs—Cold Storage for Cheese—Cold Storage of Furs.

PART V.—COLD STORAGE DIVISION.

CREAMERY COLD STORAGE BONUSES.

The Department of Agriculture has continued the policy of paying a bonus of $100 to the owners of creameries who erect and equip a small ice cold storage according to plans and specifications supplied by this branch, and who fulfil the conditions laid down in the following circular:—

DOMINION OF CANADA, DEPARTMENT OF AGRICULTURE, BRANCH OF THE DAIRY AND COLD STORAGE COMMISSIONER.

To Creamery Owners:

I am directed by the Honourable the Minister of Agriculture to state that Parliament will be asked to extend the bonus of $100 for cold storage at creameries to the year 1908.

Conditions of Payment.

Payment for the full amount of the bonus will be made at the close of the buttermaking season, upon fulfilment of the following conditions, viz.:—

(1) An efficient cold storage must be built according to plans and specifications supplied, or approved, by the Dairy and Cold Storage Commissioner, Ottawa.

(2) A sufficiently low temperature must be maintained in the cold storage to protect the butter against injury for a reasonable length of time.

Creamery owners desiring to take advantage of this bonus will be required:

(1) To make application before May 1, 1908, on forms provided for the purpose;

(2) To send in a daily record of temperature maintained in the cold storage, once a month during the season.

The construction of the cold storage will have to pass inspection by an officer of the department, or some person designated to make a report on it. The efficiency of the cold storage will be determined by this report and by the monthly reports of temperature.

Inspectors of the Department of Agriculture, Ottawa, must be permitted to examine the construction of the cold storage and to make tests of temperature at any time during reasonable working hours.

The temperature of the butter in any package which has been three days in the cold storage will be taken as representing the average temperatures of the cold storage.

Revised plans and specifications for creamery cold storages, on the 'Air Circulation' system and the 'Cylinder' system, will be furnished on application.

Some experiments in insulation were conducted by the Cold Storage Division in 1905, and as a result of the information thus obtained, we are able

to recommend a rather cheaper form of construction than has hitherto been considered advisable. The plans have been revised accordingly.

The inspector of creamery cold storages will visit, on request, as far as possible, all creameries applying for the bonus, for the purpose of giving assistance in the planning and construction of the cold storage.

The necessary forms will be supplied, free of cost.

All subject to ratification by Parliament.

Address all communications to the Dairy and Cold Storage Commissioner, Ottawa, Ont.

Yours respectfully,

J. A. Ruddick,

Commissioner.

Ottawa, Ont.,
January 13, 1908.

Forms for making application, and blue print working plans, are sent to those who apply for them to the Dairy and Cold Storage Commissioner, Ottawa. During the year ending March 31, 1908, thirty-nine applications were received for this bonus. Thirteen of the applicants failed to comply with the necessary conditions of construction or maintenance, leaving only twenty-six who were entitled to the bonus. Following are the names and addresses of those whose applications were approved of, and to whom the bonus has been paid during the year ending March 31, 1908:—

Nap. Rivard, St. Pascal, Kam., Que.
W. H. Martin, Sec., Baldwin's Mill, Que.
Rev. Thomas Gravel, Bonaventure River, Que.
W. W. Harris, Brussels, Ont.
N. Beaudin, St. Chrysostome, Que.
Art. Bernier, Cap St. Ignace, Que.
Aug. Trudel & Frere, Ste. Cecile de Masham, Que.
Fortier & Thivierge, Clarence Creek, Ont.
E. O. Dupuis, Coaticook, Que.
M. Finn, Delmont P.O., Que.
H. A. McNeill & Frere, Douglasburg, Que.
John Childerhose & Son, Eganville, Ont.
Thomas Lavoie, St. Gedeon, Lac St. Jean, Que.
Dieudonne Houle, St. Germain de Grantham, Que.
David Chapdelaine, St. Germain de Grantham, Que.
Florent Fortier, Ste. Justine de Dorchester, Que.
The Halton Creamery & Butter Co., Milton, Ont.
J. E. Pelletier, St. Martin, Beauce, Que.
Frs. Bhereur, Murray Bay, Que.
Babb & Fox, Lucan, Ont.
Broel Clouston & Cie, Peribonka, Lac St. Jean, Que.
James Small, Prescott, Ont.
H. E. Reynolds, South Roxton, Que.
Fortier & Monette, Ste. Therese Jct., Que.
A. G. Calder, Winthrop, Ont.
H. de Reinach-Werth, Trochu Valley, Alta.

ICED CAR SERVICES.

The various iced car services which have been in operation now for several years were continued during the season of 1907. It was necessary to re-arrange the iced butter car service, to some extent, in order to avoid excessive loss on the guarantee basis, because of the fact that a number of factories were making cheese instead of butter, and, as a result, the shipments of butter had fallen off considerably on various routes. In other cases, however, the service was extended, and, we think, in many respects, very much improved. As a matter of fact, the temperature records as ascertained by the inspectors in the Markets Division, go to show that the butter is being handled at lower temperatures every year.

The iced cheese cars were continued on the same plan as heretofore. That is to say, the government agrees with the railways to pay icing charges to the extent of $5 per car on a limited number of cars per week for about ten weeks beginning in July. Cars are supplied by the railway companies on demand of shippers for shipments of cheese in car lots, at regular tariff rates.

The iced fruit car service has not been taken advantage of by the fruit shippers as much as it was expected it would be when it was inaugurated. There has been no

limit placed on the number of cars, which are supplied in the same manner as the cheese cars are.

A full report of these services, including records of temperature and method of control and inspection, will be found in the report of the Markets Division. (See page 94, Part IV.)

OCEAN COLD STORAGE.

The cold storage facilities provided on the steamships sailing from the port of Montreal, are now so well known, that it is unnecessary to repeat in detail what has so often been told before. There are ample cold storage and cooled air facilities provided for all the perishable products which are offered. As a matter of fact, owing to the falling off in the shipments of butter, one of the greatest difficulties experienced by shippers at the present time, is to be found in the fact that the refrigerators are often not operated, because of lack of freight of the description requiring cold storage. With chambers designed to hold from three to ten thousand packages of butter, one cannot blame the steamship companies if they hesitate to operate the chambers for a few hundred packages, not only because of the expense of operation, but because by putting butter in the chamber, they are prevented from using it for other cargo, and thus the empty space is a dead loss. The steamship companies have shown a desire to meet the needs of the shippers as far as possible, and, on the whole, there appears to have been very little ground for complaint. Large quantities of American produce are offered for shipment in Montreal, on account of the superior facilities offered through the Montreal service. This United States traffic has been a help to Canadian shippers, for without it, the services could hardly have been maintained on their present footing since the exports of butter have fallen off.

PRODUCTS SHIPPED IN COLD STORAGE AND COOLED AIR.

The following figures have been compiled from the reports of the cargo inspectors employed by the Department of Agriculture during the period of navigation at Montreal and Quebec, for the season of 1907:—

	In Cold Storage.	In Cooled Air.
Cheese (boxes)	.....	290,076
Butter (packages)	66,896	52
Meats (boxes) —Canadian	2,858	29,071
" " —U.S.A	33,707	11,615
Beef (quarters)—U.S.A	4,991	.....
Lard (packages) —Canadian	.....	.....
" " —U.S.A	19,635	6,711
Apples (bbls.)—Canadian	6,131	1,729
" (boxes)—Canadian	500	3,232
" (bbls.)—U.S.A	.....	.....
" (boxes)—U.S.A	.....	796
Tender Fruits (boxes) —Canadian	754	.....
" " " —U.S.A	11,118	.....
Eggs (cases)—Canadian	.....	938
" " —U.S.A	1,436	.....

The proportion of products carried in cooled air was really much larger than what is shown in these figures, because only those shipments on which the extra freight was paid are included. Many shipments were carried in cooled air at ordinary rates, but in such cases they are shown on the ship's papers as ordinary cargo.

There are no figures available to show the proportion of the various products carried in cold storage, cooled air and ordinary stowage since the close of navigation in the St. Lawrence, but it may be stated that practically everything is carried in ordinary stowage during the winter months.

BUTTER TEMPERATURES ON BOARD STEAMSHIPS.

During the season of navigation of 1907 the cargo inspectors at Montreal tested the temperatures of 776 packages of butter as these were being loaded into the steamers. After taking the temperatures each package was marked so as to enable the inspector at the port of discharge to get the temperature of the same package as soon as it was unloaded from the steamer. The temperatures for each line have been averaged for the season, and the results are shown in the following table:—

Steamship Line	Number of Sailings with Butter.	Number of Packages Tested.	Average Temperature at Montreal.	Average Temperature at Port of Discharge.	Reduction in Temperature.
Montreal to Bristol—					
Dominion	10	112	36·1	22·1	14·0
C. P. R.	5	74	34·3	23·7	10·5
General average			35·4	22·9	12·5
Montreal to Glasgow—					
Donaldson	14	135	35·2	17·1	18.1
Allan	7	48	37·6	23·0	14·6
General average			35·9	19·2	16.7
Montreal to Liverpool—					
Allan	11	110	34·3	21·8	12·5
Dominion	7	67	33·2	25·1	8·1
C. P. R.	1	6	29·7	26·8	2·9
General average			33·7	23·1	10·6
Montreal to London—					
Allan	7	65	33·6	18·1	15·5
Thompson	12	152	30·7	20·6	10·1
General average			36·2	15·3	20·9
Montreal to Manchester—					
Manchester Liners	1	7	40·9	34·0	6·9

If the foregoing records are compared with those in the report for 1907, it will be found that the temperatures were lower at both Montreal and ports of discharge in Great Britain in 1907 than they were in 1906.

AMOUNT OF COLD STORAGE SPACE AVAILABLE FROM MONTREAL AND QUEBEC DURING THE SEASON OF 1907.

There were 47 steamships sailing from the ports of Montreal and Quebec, for British ports, during the season of 1907, with a total space of 1,014,157 cubic feet for cold storage and 907,440 cubic feet for 'cooled air.'

Adding together the total sailings for the season, the available space was 5,001,819 cubic feet of cold storage, and 4,248,797 cubic feet of cooled air.

In addition to the services to the United Kingdom there is cold storage on the following lines: (1) to South Africa, (2) to the West Indies, (3) to the Bahamas, Cuba and East Coast of Mexico, (4) to West Coast of Mexico, and (5) to New Zealand.

SESSIONAL PAPER No. 15a

SAILINGS OF STEAMERS FROM MONTREAL AND QUEBEC HAVING COLD STORAGE ACCOMMODATION, SEASON 1907.

Name of Steamer.	Number of Sailings.	Number of Chambers.	Capacity in Cubic Feet.
ALLAN LINE.			
To Liverpool—			
Tunisian	7	4	21,650
Victorian	7	5	17,260
Virginian	8	4	12,440
Ionian (part of season only)	3	6	13,553
Corsican	5	5	24,270
To London—			
Hibernian	6	3	7,956
Hungarian	5	3	7,124
Ontarian	5	4	16,843
Pomeranian	5	2	8,056
Sardinian	5	2	9,628
Parisian	5	1	4,790
To Glasgow—			
Corinthian	6	4	16,722
Sicilian	6	4	17,980
Pretorian	6	6	25,270
Mongolian	4	2	8,101
Numidian	2	2	8,101
Ionian (part of season only)	3	6	13,553
Grampian	2	5	23,400
CANADIAN PACIFIC LINE:			
To Liverpool—			
Lake Erie	5	4	21,700
Empress of Britain (from Quebec)	7	3	29,700
Empress of Ireland (from Quebec)	7	3	29,700
To London—			
Montrose	3	4	23,000
To Bristol—			
Montcalm	5	1	15,340
Monmouth	4	2	15,400
Montfort	5	3	24,700
DOMINION LINE.			
To Liverpool—			
Dominion	6	4	40,985
Canada	5	4	47,915
Kensington	6	1	25,867
Southwark	6	1	25,313
Ottawa	6	2	27,410
Vancouver	2	4	14,750
To Bristol—			
Manxman	5	3	54,480
Turcoman	5	4	38,440
Englishman	5	4	37,600
DONALDSON LINE.			
To Glasgow—			
Marina	6	4	11,719
Parthenia	5	4	16,000
Athenia	6	4	16,122
Lakonia	6	4	14,526
Kastalia (one voyage only)	1	4	13,498
Cassandra	6	3	7,770

Name of Steamer.	Number of Sailings.	Number of Chambers.	Capacity in Cubic Feet.
MANCHESTER LINE.			
To Manchester—			
Manchester Trader	4	2	5,000
THOMSON LINE.			
To London—			
Cervona	5	4	14,321
Devona	4	3	21,953
Hurona	4	4	20,487
Iona	6	4	18,472
Kildona	5	3	14,570
Latona	5	4	45,682
LEYLAND LINE.			
To Hull—			
Lancastrian	2	5	65,040

SUMMARY.

	Number of Sailings.	Cubic Feet.
To Liverpool	80	2,044,724
" London	63	1,002,398
" Glasgow	59	890,217
" Bristol	29	914,400
" Manchester	4	20,000
" Hull	2	130,080
Totals	237	5,001,819

COOLED AIR SERVICE, 1907.

The following steamships with cooled air service sailed from the port of Montreal during the season of 1907.

Name of Steamer.	Number of Sailings.	Cubic Feet Space.
Allan Line—		
Pomeranian	5	26,000
Hungarian	5	45,540
Hibernian	6	45,540
Ontarian	5	19,000
Sardinian	5	17,600
Canadian Pacific Line—		
Montcalm	5	18,668
Monmouth	4	19,443
Dominion Line—		
Southwark	6	41,472
Canada	5	46,904
Kensington	6	42,116
Turcoman	1	40,491
Englishman	2	18,617
Manxman	3	41,585
Thomson Line—		
Iona	6	80,178
Cervona	5	97,530
Kildona	5	79,389
Hurona	4	79,707
Devona	4	97,574
Latona	5	50,086

SUMMARY.

	Number of Sailings.	Cubic Feet.
To Liverpool	17	736,048
" London	55	3,139,157
" Bristol	15	373,592
Totals	87	4,248,797

THERMOGRAPHS IN STEAMSHIPS, SEASON 1907.

During the season 385 temperature records were secured, by placing thermographs (recording thermometers) in cold storage and cooled air chambers, and also in ordinary holds with cheese, meats and apples.

The following table shows the kind of produce which these records cover:—

Placed with.	Where placed in Steamship.		
	Cold Storage.	Cooled Air.	Ordinary Storage.
	Times.	Times.	Times.
Butter	57		
" and lard	10		
" and frozen pork	1		
" and boxed meats	3	2	
" lard and lumber	1		
Apples	7	3	45
" and cheese			7
" cheese and lard			1
" and soft fruits	1		
" and tomatoes	3		
" and eggs			2
" cheese, eggs and meats			1
" and lard			1
" lard and meats			1
" and meats	1		
Cheese	2	18	142
" and meats		26	23
" and lard		1	4
" apples and meats		4	3
" meats and lard	1		
" and lumber			5
Boxed meats	1	2	1
" " and fruit	3		
Fresh and frozen salmon	1		
Pears and plums	1		
Total	93	56	236

SUBSIDIES FOR COLD STORAGE WAREHOUSES.

Applications for subsidies under 'The Cold Storage Act' were received from the following companies or firms:—

The New Brunswick Cold Storage Co., St. John, N.B.; The Scott, Ashton Co., Morrisburg, Ont.; The Edmonton Produce Co., Edmonton, Alta.; Scott & Hogg, Peterboro, Ont.; The Halifax Cold Storage Co., Port Hawkesbury, N.S.; The Canadian Fish & Cold Storage Co., Prince Rupert, B.C. Inquiries have been made by several other firms.

Contracts have been entered into with the New Brunswick Cold Storage Co. and with the Scott, Ashton Co., and others are under consideration.

The Act provides:

(1) The Governor in Council may enter into contracts with any person for the construction, equipment and maintenance in good and efficient working order, of public cold storage warehouses equipped with mechanical refrigeration, in Canada, and suitable for the preservation of all food products.

(2) The Governor in Council may, out of any moneys appropriated by Parliament for the purpose, grant towards the construction and equipment of any such warehouse, a subsidy not exceeding in the whole 30 per cent of the amount expended or approved of in such construction and equipment, and payable in instalments as follows: upon the warehouse being completed and cold storage at suitable temperatures being provided therein, all to the satisfaction of the Minister of Agriculture, a sum not exceeding

15 per cent of the amount so expended; and at the end of the first year thereafter 7 per cent of the said amount; at the end of the second year thereafter 4 per cent of the said amount, and at the end of each of the two next succeeding years 2 per cent of the said amount: provided the warehouse is maintained and operated to the satisfaction of the Minister of Agriculture.

The New Brunswick Cold Storage Company's warehouse has been completed and the first instalment of the subsidy has been paid. This is a first-class warehouse of approved 'slow burning' construction and well equipped with the most modern machinery. The cost, according to the statement of the company on which the claim for the subsidy is based, is less than 25 cents per cubic foot of refrigerated space. That is a very low cost for a building of its class.

The proposal of The Canadian Fish & Cold Storage Co., is an important one, which if carried out, should help very materially in developing the fresh fish trade of the Pacific coast.

It is probable that the extension of the cold storage business in the near future will be confined largely to centres of production for various products and will be in the hands of those who deal in these goods. The joint management of a warehouse and trading business reduces working expenses and removes any conflict of interest between the owners of the goods and the management of the warehouse.

If the owner of the warehouse is also the owner of the goods in store, he is more likely to give that close attention to operating details which ensures success.

The necessary forms for making application for a subsidy, and full information concerning the payment of subsidies may be obtained from the Dairy and Cold Storage Commissioner, Ottawa.

COLD STORAGE WAREHOUSES IN CANADA.

The following is a list of the public cold storages in Canada as far as replies have been received to a circular which was sent out asking for the information.

Name.	Location.	Capacity of Storage for Butter, Fish, &c.	Capacity of Storage for Cheese, Butter, Fruit, &c.	System of Refrigeration.
		Cubic Feet.	Cubic Feet.	
Manning Cold Storage Co.	Toronto, Ont.	50,000	75,000	Mechanical.
The Bay of Quinte Railway Co.	Deseronto, Ont.	4,313	9,416	Ice.
The Union Cold Storage Co.	Montreal, Que.	175,000	550,000	Mechanical.
The Halifax Cold Storage Co., Ltd.	Halifax, N.S.	37,334	None.	Mechanical.
The Canada Cold Storage Co., Ltd.	Montreal, Que.	219,616	542,691	Mechanical.
The J. D. Moore Co., Ltd.	St. Mary's, Ont.	70,000	70,000	Ice overhead.
A. A. Ayer & Co., Ltd	Montreal, Que.	200,000	500,000	Linde British machines.
Ottawa Cold Stores, Ltd.	Ottawa, Ont.	42,900	52,000	Mechanical.
J. B. Jackson	Simcoe, Ont.	1,000	35,000	Gravity brine.
The New Brunswick Cold Storage Co., Ltd.	St. John, N.B.	156,000	588,000	Mechanical.
St. Catharines Cold Storage Co.	St. Catharines, Ont.	.....	28,000	Mechanical.
The London Cold Storage and Warchousing Co., Ltd	London, Ont.	117,000	205,000	Mechanical.
St. Lawrence Produce Co.	Brockville, Ont.	.....	50,000	Ice.
R. J. Graham	Belleville, Ont.	.....	165,000 cu. ft. in mechanical.	62,560 cu. ft. in ice storage.
Gunn, Langlois & Co.	Montreal, Que.	100 to 125,000	200 to 250,000	Mechanical.
The Gould Cold Storage Co.	Montreal, Que.	about 125,000	475,000	Mechanical.
Lovell & Christmas	Montreal, Que.	65,000	410,000	Mechanical.
Northwest Jobbing and Commission Co., Ltd.	Lethbridge, Alta.	2,214	3,316	Mechanical.
Scott & Hogg	Peterboro, Ont.	5,000	43,000	Gravity brine.
The Manitoba Cold Storage Co.	Winnipeg, Man.	80,000	110,000	Mechanical.
The B. C. Cold Storage Co.	Victoria, B.C.	20,000	15,000	Mechanical.
The Vancouver Ice and Cold Storage Co.	Vancouver, B.C.	350,000	50,000	Mechanical.
The Pacific Cold Storage Co.	Dawson, Y.T.	44,675	9,760	Mechanical.

THE COLD STORAGE OF EGGS.

Cold storage has, during recent years, almost superseded other methods for the preservation of eggs in large quantities. Experience and improved equipment of cold storage warehouses, have combined to produce better and better results, and certain imperfections which have been believed in some quarters to be unavoidable in cold storage eggs are now known to be due to bad management, poor equipment, or the poor quality of the eggs when placed in store. Eggs for long keeping in cold storage, should be gathered during the months of April, May and possibly the early part of June. Earlier eggs are apt to be thin shelled and weak bodied, and after the first few days of June when the weather becomes hot, the eggs deteriorate so quickly that the difficulty of securing them in good condition is very much increased.

A considerable change of opinion has taken place in regard to the minimum temperature for egg storage during recent years. At one time, 40 degrees was considered to be low enough, but the temperature has been gradually reduced, until now the most experienced egg men hold the temperature as low as possible without freezing the eggs. The critical temperature for perfectly fresh eggs is about 27 to 28 degrees, and 29 to 30 is as low as it is practicable to keep the temperature in the egg rooms. Very perfect equipment and exceedingly good insulation are required to maintain a temperature of 29 to 30 degrees without having some part of the room too cold. The indirect or air circulation system is generally approved for the equipment of egg storage rooms, and it is needless to argue that if the insulation is very efficient a smaller amount of refrigeration will be required to maintain the temperature of the room at the desired point, and there will be less difference between the average temperature of the rooms and that of the air at the point where the circulation enters.

It is an advantage also to have the inlets for cold air well distributed, so as to reduce the flow of air at any given point.

In piling the egg cases in a storage room, it is necessary to put dunnage between the different tiers so as to make provision for a free circulation of air among the cases. When eggs are kept at 29 or 30 degrees, it does not seem to be necessary to turn the cases from time to time as it is when the temperature is higher. The low temperature stiffens the white of the egg to such an extent that the yolk is prevented from floating and becoming attached to the shell. In connection with this point, it is also advised that the eggs should be placed in the fillers with the point down, because it is obvious that the yolk in rising will not come in contact with the shell as quickly with the big end up as it would if the point were up. It is very often supposed that the yolk settles in the egg, but being lighter than the white of the egg, the contrary is what occurs.

One of the defects of cold storage eggs in the past has been a tendency to develop mustiness of flavour due to the growth of mould or 'fungus' on the shell. Two conditions which promote the growth of mould are moisture and high temperature. It follows, therefore, that the lower the storage temperature is, and the drier the air in the room is kept, the less will be the trouble from mould, other things being equal. Of course, there is a practical limit to the reduction of the relative humidity, because if carried too far, it will cause excessive shrinkage of the eggs. It is now generally recommended that 75 to 85 per cent of relative humidity is about right at a temperature of 29 to 30 degrees. Where the air circulation system is used, the humidity is controlled, to some extent, by passing the air over expansion coils which are kept continually wet with calcium chloride brine. If this is not sufficient, calcium chloride can be exposed in trays or racks in different parts of the room and for the purpose of absorbing the moisture, the affinity of this salt for water being very great. Some German authorities claim that the calcium chloride has a germicidal effect also, and that the air of the room passing over surfaces wetted with calcium chloride brine, is more or less disinfected.

A psychrometer should be provided for determining the relative humidity. The sling psychrometer is largely used in the United States. This consists of two accurate thermometers firmly fixed to a frame which is attached to a handle with a swivel so that it can be whirled in the air. The bulb of one thermometer, which should project about one inch below the frame, is covered with a piece of muslin, and before whirling, this bulb is moistened with water at the same temperature as the storage room. After whirling for about half a minute, the readings should be quickly taken. The evaporation of moisture from the muslin covered bulb reduces the temperature on that thermometer, and the drier the room is the more rapid will be the evaporation, and hence the greater the difference in the readings of the two thermometers. Tables are provided for calculating the relative humidity from the difference in the two readings. Another form of the wet and dry bulb thermometer is provided with a device for keeping the muslin constantly wet. These instruments should be fanned vigorously for a half minute before taking the reading.

Only clean, sound eggs will keep satisfactorily in cold storage. It is important that they should be put into store as quickly as possible after they are laid.

The cases and fillers, it is needless to say, should be new and made of odourless material. Many eggs are tainted by 'musty' fillers or fillers which become musty in store.

Any person who uses second-hand cases or old fillers is liable to meet with very much disappointment and financial loss. Care should be taken to see that any material which is used as a cushion for the bottom and top layers of eggs, should be thoroughly dry and free from any signs of mould or 'mustiness.' For that reason, new excelsior is probably the best material to use for that purpose.

Difficulty is usually experienced in removing eggs from low temperatures into the ordinary atmosphere, without injury, especially in climates where the relative humidity is high. The cold egg collects moisture from the air. One plan of avoiding the condensation of moisture is to remove the eggs by successive stages through rooms of different temperature until the outside temperature is approached. Another plan for handling small quantities of eggs, is to bring them into a moderate temperature room a few hours before they are to be taken away from the warehouse, and there they should be covered with a tarpaulin or canvass to prevent the circulation of air in and around them, while they are being warmed to the temperature of the air in the room.

Too much care cannot be given to egg storage rooms to have them thoroughly disinfected every year. As soon as they become empty they should be thoroughly dried by ventilation and heating, if necessary, and then given a good coat of whitewash. For the purpose of thorough disinfection, a scrubbing of the interior surfaces with a solution of one part bi-chloride of mercury (corrosive sublimate) to one part of water, before whitewashing, will thoroughly destroy all spores of mould or other germs.

COLD STORAGE FOR CHEESE.

Cheese is unlike any other product for which cold storage is employed in its preservation. In cold storing butter, meat, poultry, fish or fruit, the object is to preserve them as nearly as possible without change, for the reason that they are at their best when first available either for storage or consumption. Cheese improves with age, under proper conditions, for many months. It is difficult to say how long it will continue to improve. Much depends on the character of the particular cheese, and also on the tastes of the consumer.

The highest type of Cheddar cheese—that which is produced in Great Britain—is never placed in cold storage, but is cured and stored at a temperature of 60 to 65 degrees, and it is at that temperature that the most desirable flavour is developed. In

Canada the conditions are different, and the temperature which prevails during the summer months, in ordinary cheese curing rooms and warehouses, is too high for good results, as it often rises to 85 or 90 degrees. If cheese is exposed to these high temperatures for a few days only, at any time after it is made, certain ferments are encouraged and developed which, if not checked by comparatively low temperatures, will eventually produce results which are detrimental to the quality of the cheese.

It may be said, therefore, that the temperature at which cheese should be held in a cold storage will depend upon whether such cheese have been cool cured, or have been exposed to unduly high temperatures. Strictly cool cured cheese of good quality should not be stored at temperatures under 55 or 60 degrees. At that temperature the desirable flavours will develop and the texture of the cheese will continue to improve for many months. If cool cured cheese are received into store within a week or two after they are made, it is necessary to allow the ripening to proceed normally for some time, otherwise the cheese may not be in best condition for consumption when required.

On the other hand, if cheese have been exposed to high temperatures, the ripening processes will have proceeded further, as well as those undesirable changes already mentioned, and in order to check these injurious ferments, a comparatively low temperature is necessary, say 36 to 40 degrees, according to the condition of the cheese. A Cheddar cheese will never develop its highest quality at these low temperatures. The flavour will be lacking in that peculiar, rich 'cheesy' quality from which it derives its highest value. It is a case, however, of choosing the lesser of two evils. We cannot secure the fancy quality, but we prevent the serious deterioration in quality, and value, consequent on the development of bad flavours. These remarks apply more particularly to cheese intended for long storage.

One disadvantage attending the storage of cheese at the higher temperature is that they lose much more in weight by the evaporation of moisture than they do at the lower temperature.

COATING CHEESE WITH PARAFFIN WAX.

The shrinkage of cheese while in storage at any temperature may be almost entirely prevented if the cheese are coated with paraffin wax when they are ten days or two weeks old. It will pay to 'paraffin' any cheese which are to be stored for one month or over. (For particulars *re* paraffining cheese see Dairy Commissioner's Report for 1906.)

THE USE OF ICE FOR CHEESE STORAGE.

In view of the comparatively high temperature at which cheese may be stored under certain conditions, the use of ice as a cooling medium should not by any means be considered as obsolete for such a purpose, especially in sections of the country where natural ice is available at a reasonable cost. A basement, fitted with a cement concrete floor, and fairly well insulated walls, may be maintained at a temperature of 50 to 60 degrees with a supply of ice for the season equal to about one ton for every 200 cubic feet of space to be cooled. The cement floor, being a fairly good conductor of heat, acts as a cooling medium down to the point of the constant temperature of the earth underneath, which varies from 50 to 55 degrees. Of course, it follows that if we desire to have a lower temperature, the uninsulated cement concrete is very unsuitable, because as soon as the temperature of the room goes below the constant temperature of the earth, the floor will give off heat, just as it absorbs heat when the room is warmer. Ice storage for cheese is not confined to basement rooms. Any other part of a building, which is on a slightly lower level than the ice chamber so as to permit of a circulation of air, may be used, but a larger amount of ice will be required to keep the temperature down to 55 or 60 degrees where the cement floor lying on the ground is

not available as an auxiliary cooling medium. Nor is ice storage for cheese limited to temperatures of 55 to 60. If lower temperatures are desired, it is quite practicable to go as low as 38 to 40 or even a degree or two lower in a well built storage and after the cheese have all been cooled off.

Coating cheese with paraffin wax is especially useful in an ice storage, as it prevents the excessive growth of mould, which is favoured by the high relative humidity of ice stores, as a rule.

One of the serious objections to ice storage in the past has been the rapid decay of the insulation and the structural parts of the warehouses, owing to the dampness arising from the melting of the ice. While this weakness, or defect, as it may be called, is more pronounced in some systems than it is in others, it is more or less inseparable from all forms of wood construction, which material has been almost universally used for interior finish of ice storages. There is no reason, however, why the permanent and fire-proof materials now used in the construction of many of the large mechanical plants should not be used for ice storages, especially for the construction of ice chambers. Combinations of sheet cork, asphalt, glazed tile, cement, &c., are now made practically water and damp proof, and although more expensive to install, such materials are durable and sanitary, and probably cheaper in the end than wood. One difficulty in country places where such materials have not yet come much into use is to have them properly erected, but that difficulty will gradually grow less as this use of these materials becomes better known to mechanics and builders.

COLD STORAGE OF FURS AND WOOLLENS.

All goods subject to attacks by 'moths' are absolutely protected from such injury if kept in a temperature under 40 degrees. In large centres of population a profitable trade is being developed in the storage of this class of goods, which includes fur in all forms, woollen clothing, blankets, carpets, rugs, drapery, &c. The cold storage of furs also prevents the deterioration which follows their exposure to a hot, dry atmosphere. The softness, therefore the durability of the skin, and the glossiness of the fur is preserved by low temperatures.

Garments in cold storage are usually suspended on forms without covering, but securely tagged for identification. A very good arrangement for the storage of garments would be to have a series of lockers of suitable size, constructed of heavy wire netting or gratings, which could be rented to customers at a fixed rate.

No attention is necessary during the period of storage, but the warehouseman, in his own interest, should make a careful inspection when the goods are received, and note on the receipt any defect or injury which may be apparent at that time. All goods should be well shaken and brushed before being placed in storage, and all traces of 'moth balls' or other evil smelling substances carefully removed, in order to avoid risk of injury or taint of food products in the same warehouse. A special room should be set aside for this class of custom, if the quantity of goods received will warrant it.

SANITATION IN COLD STORES.

It frequently happens that goods are offered for storage in an advanced state of decomposition and are placed in store simply because they cannot be kept any longer at ordinary temperatures. The deterioration of butter, meat, fish, eggs, &c., when kept at suitable low temperatures, is very much slower if the goods are placed therein in a perfectly fresh condition than it is if the deterioration has reached an advanced stage before they are put in store. For that reason it is highly important that the cold storage manager should take cognizance of the condition of all produce which is offered for storage, and refuse all goods which are already in bad condition. Con-

sumers should not be too ready to blame this process of preservation, unless they know something about the condition of the goods when placed in storage.

There is a prejudice in some quarters against cold storage goods which is unreasonable. There are very few housekeepers in Canada who do not avail themselves of the principles of cold storage every winter. When we place our supplies of meat, milk or cream, in a cool place in order that they may not spoil too quickly, we are utilizing the same agency as the cold storage man does with the goods which are committed to his care. It is a very common practice to buy poultry and meat in the early winter and to keep them in a frozen condition until required for consumption during the winter months. There is no difference in principle between the system of freezing poultry and leaving it out of doors in winter, and in putting it into cold storage in the summer months.

Cold storage sometimes fails to preserve food products in a satisfactory condition, if the sanitation of the warehouse is not properly attended to. The air of cold storage chambers must be changed from time to time and the humidity regulated to avoid excessive growth of mould, and some thorough method of disinfection must be employed to keep the rooms in a sweet and wholesome condition, so that goods stored therein will not be injuriously affected. For this purpose there is nothing better than a liberal use of lime water or whitewash at least once a year on all the interior surfaces of the cold storage rooms. In addition to the purification which is effected with lime, a thorough disinfection of mouldy rooms by washing the walls, ceilings and floors with a solution of bi-chloride of mercury (1-1000) in water, will be found most effective in destroying mould, and it has the further advantage of preserving a wooden structure from decay. It is not the dampness which causes wood to rot, but it is because the dampness favours the growth of mould, which feeds on the wood. Cold storage men have not, as a class, paid sufficient attention to these features of their business. They have accepted without question goods in various stages of decomposition. This brings discredit on the whole question of cold storage. They should bear in mind also that the condition of the goods coming out of store will be very much affected by the sanitary conditions of the rooms in which they are stored.

Cheese exhibit at Shepton Mallet.

Some Dutch Cows.

Fig. 1.—An Edam Cheese Factory.

Fig. 2.—The Cheese Market at Alkmaar.

Two views of a modern Dutch Stable.

REPORT

OF THE

DAIRY AND COLD STORAGE COMMISSIONER

FOR THE

FISCAL YEAR ENDING MARCH 31

1908

PART VI.—VISIT TO GREAT BRITAIN AND HOLLAND.

TABLE OF CONTENTS.

Canadian Produce in Great Britain—Cheesemaking in Somerset—Meetings Addressed —Canadian Fruit in Great Britain—The Cider Industry—The International Dairy Congress—Dairying in Holland—Congress of Goutles de Lait.

PART VI.—VISIT TO GREAT BRITAIN AND HOLLAND.

The Branch of the Dairy and Cold Storage Commissioner deals largely with the commercial side of the dairy, fruit and allied industries, and as the export of the products of these industries to Great Britain forms so large a part of the trade in them, it is important that those who direct the work assigned to the branch should keep in close touch with the tendencies and requirements of that market. There is no better way for the head of the branch to secure this desirable information than to make occasional visits to the old country for the purpose of getting into personal touch with importers and others connected with the trade.

An official visit from a representative of the Canadian Department of Agriculture attracts considerable notice, and the occasion is given such publicity through the press that the attention of all readers is drawn to Canadian produce. The knowledge that the Canadian government is looking after these things is an assurance to merchants and consumers, and a material assistance in establishing confidence in Canadian food products.

Arriving in Liverpool on July 27, the writer spent the month of August in visiting the various produce centres, addressing meetings, interviewing merchants and discussing with them the various aspects of the Canadian trade in butter, cheese, fruit and other produce.

CANADIAN BUTTER IN GREAT BRITAIN.

Much disappointment was expressed over the decline in the shipments of Canadian butter, which had reached the point in 1905 where it was beginning to have a distinct place in the British market. If the quantity exported had shown an increase instead of a decline, or if the shipments had even been maintained at the level of 1903-5, the demand for our butter should have shown considerable improvement. As it is now with the insignificant amount shipped in 1907, nobody is taking much interest in it.

A marked feature of the butter trade of the United Kingdom in 1907 was the large increase in the shipments from Australia and Siberia, the supplies from both countries having exceeded those in all previous years. The quantity of Irish creamery continues to increase and to improve in quality, but as it is a home production, the figures do not appear in the Trade and Navigation tables. The importance and volume of the Irish supply is therefore often overlooked. The total value of the Irish butter shipped annually to England and Scotland is variously estimated at from $20,000,000 to $30,000,000. About two-thirds of the whole quantity is made in creameries. There are now nearly 900 creameries in Ireland.

THE BUTTER AND MARGARINE ACT.

Much interest was aroused in produce circles over the passage of 'The Butter and Margarine Bill,' a measure which has been before the British Parliament in various forms for many years, but which was always allowed to stand over for various reasons.

The provisions of the new law, known as 'The Butter and Margarine Act, 1907,' which are of interest to Canadians are as follows:—

PROVISIONS AS TO THE IMPORTATION OF BUTTER, MARGARINE AND MILK-BLENDED BUTTER.

5. (1) There shall be included in the list of articles importation of which is made an offence by section 1 of the Sale of Food and Drugs Act, 1899, the following articles:—

(*e*) Butter containing more than 16 per cent of water;

(*f*) Margarine containing more than 16 per cent of water, or more than 10 per cent of butter-fat;

(*g*) Milk-blended butter containing more than 24 per cent of water;

(*h*) Milk-blended butter, except in packages conspicuously marked with such name as may be approved by the Board of Agriculture and Fisheries for the purpose;

(*i*) Butter, margarine, or milk-blended butter which contains a preservative prohibited by any regulation made under this Act, or an amount of a preservative in excess of the limit allowed by any such regulation.

CANADIAN CHEESE IN GREAT BRITAIN.

Canadian cheese continues to hold its own in the market. New Zealand shipments of cheese are attracting considerable attention, because it is probable that the quantity imported in 1907-8 will be very nearly double what it was during the season of 1906-7. The actual increase, however, in New Zealand shipments is not expected to be over 100,000 boxes. The quantity is not large enough to seriously affect the market, and not more than the variation in the Canadian output from year to year. (See page 109.)

THE GREEN CHEESE EVIL.

I heard many complaints about the shipping of green cheese, especially from the smaller dealers, who buy only in sufficient quantities to supply their current demands. The large dealers, in some cases, were more or less indifferent on the question, probably because their large stocks enable them to hold such cheese as are not fully matured until they are in better condition for consumption. The idea was advanced in some quarters that the large dealers were encouraging the shipping of green cheese, knowing that the practice if continued would seriously curtail the trade of the smaller dealer, and thus tend to give them (the large dealers) a monopoly of the business. One thing is certain: the consumption of cheese was checked by the shipment of green cheese during the early part of the season of 1907.

CUTTING OF PRICES.

The action of some of the large multiple shop companies in reducing the retail cut of cheese to a price which was lower than that at which the cheese could be purchased in Canada, created considerable stir in certain quarters. This competition was very keenly felt by the small shopkeeper, who must sell his cheese at a profit in order to live. While he was compelled to keep cheese for those who asked for it, the less he sold of it the better off he was, therefore, he kept it under the counter as much as possible. Whether this cutting of prices was the result of competition between the large companies and was adopted by them as a matter of advertising, or whether it was a deliberate attempt to freeze out the smaller shopkeper, I am unable to say. If continued long enough, however, such a course could not be otherwise than detrimental to the cheese trade, because while the low price has a tendency to encourage consumption on the one hand, the loss of profit to the small shopkeeper would mean that he would cease to push the sale of cheese. The shopkeeper is a very important factor in controlling the consumption of any food product. It is natural that he urges the sale of the article on which he is making the biggest profit, and which he can handle with

most satisfaction to himself. To give the shopkeeper a reasonable profit is one of the surest ways of increasing the consumption of any article. Customers are very much influenced by the suggestions and persuasions of the merchant from whom they purchase their supplies.

CHESHIRE CHEESE.

The Cheshire cheese was also somewhat of a disturbing factor in the market of 1907. The output was said to be a record one, although it seems to be impossible to secure an accurate estimate of the actual quantity manufactured. While the Cheshire cheese is not sold to any extent outside of Lancashire, that is to say, in Liverpool, Manchester and surrounding districts, comparatively small quantities were offered on the London market during the past season. There are two kinds of Cheshire cheese. The old Cheshire is a slow-ripening cheese which is allowed to develop considerable 'tastiness' before it is offered for sale. The new Cheshire is a very soft, loose-textured, acidy sort of cheese, which is put on the market in a very green condition, but which owing to the excessive moisture, has a softness that seems to pass for maturity. Although the supply of this cheese has increased in recent years, it does not seem to be very popular except with certain classes and in a limited district. The increased supply has so reduced the price during the last year or two that it will probably cease to be as popular as it has been with farmers who produce it.

IMPROVED FACILITIES AT LIVERPOOL.

A very important improvement was completed at Liverpool in October last, when the Canadian Pacific Railway Company opened a cold storage warehouse in the shed at the Sandon dock, where the Montreal-Liverpool steamers of that line discharge. Butter, cheese, bacon and fruit can now go direct from ship to cold storage, and the exposure consequent on delay in removal from the quay is avoided. The equipment is first class, and there is ample room for extension as the needs of the traffic may warrant.

Judging by the expressions of appreciation from the importers of Liverpool, the facilities which this improvement provides will be fully utilized.

With the opening of the new King Edward Dock at Bristol, added to the splendid arrangements at London, Canadian produce should now be well cared for on being landed at these three important ports. Glasgow is still without these special dock facilities, but it must be admitted that owing to climatic conditions the need is not so great at that port as it was at the more southerly ports.

CHEESEMAKING IN SOMERSET COUNTY.

Most Canadian cheesemakers know that the type of cheese to which the Canadian variety belongs had its origin, many generations ago, in the picturesque county of Somerset, England, and that it derives its name from the old village of Cheddar, situated therein. The county still retains its supremacy and reputation for high-class Cheddar cheese, and an enormous quantity is produced within its borders every year. There are no factories such as we have in Canada, the cheese still being manufactured on the farms where the milk is produced. The art of cheesemaking has been reduced to a systematic basis of recent years, mainly through the efforts of the county council, which has established schools where the dairymaids are given courses of instruction in the theory and the art of cheesemaking. Having a day or two to spare, the writer concluded that the time would be well spent in acquiring some first hand knowledge of the conditions which enable the Somerset cheesemakers to win such a high place for their product in competition with the outside world.

Through the kind offices of Mr. W. A. MacKinnon, Canadian Trade Commissioner at Bristol, a trip was planned in advance, so that no time was lost in unnecessary travelling.

A LEADING SOMERSET DAIRY.

Starting from historic old Bristol one beautiful August morning, accompanied by Mr. MacKinnon and Mr. E. G. Walker, a well known agricultural writer who is thoroughly familiar with the dairy industry of the district, the first stop was made at Taunton Drew Manor. At the Rectory Farm, Mr. Walter J. Keel runs a high-class cheese dairy, using the milk of 40 milking Shorthorns. Mr. Keel is one of the committee in control of the Somerset Cheese School, and a first-class dairyman, who understands every detail of the business from the management of the herd to the disposal of the product. As an evidence of the care which he bestows on his dairying, it may be mentioned that his cheese sell regularly for 84 shillings a cwt. (18 cents a pound). The methods which produce such a result should be interesting to Canadian dairymen. In the first place, the pasture lands are carefully cleared of all weeds and foreign growths, leaving nothing but the sweet flavoured grasses from which the cows obtain their sustenance. Mr. Keel will tell you that there are two reasons for this, namely, that he cannot afford to waste the fertility of the soil growing useless weeds, and that he dare not run the risk of having his milk tainted with weedy flavours. The cows are milked in the pasture field, in opposition to the practice which prevails in Scotland of milking in the stable, but there is no fixed or stationery milking yard where filth and dust accumulate, as they will in a place where cows are regularly milked. He lays much stress on this point, and we think very properly so, because there is serious contamination of the milk from the germs which are found in the dust arising from the dried droppings of animals. Although the nights are cooler in Somerset than they are in Canada, the milk is well cooled when carried to the dairy. The dairy adjoins the house, and needless to say, it is as clean and free from offensive odours as the best kept kitchen. The process of cheesemaking does not differ essentially from that which is practiced in Canada, but to that we shall refer again. The cheese are cured slowly at 60-65 degrees (cool cured) and are not moved from the curing room until they are two and a half months old.

SOMERSET CHEESE SCHOOL.

The next point of interest was the Somerset Cheese School, where we were most cordially received by the capable instructress, Miss M. J. Cannon, a daughter of another well known Somerset dairyman, Mr. Henry Cannon, of Milton Clevedon, Evercreech. The school is conducted at Dudwell Farm, Chewton Mendip, where there is a fine, large dairy. The courses given are thoroughly practical, the students taking part in the actual work of making cheese every day. The apparatus in use in these dairies naturally differs considerably from that which is employed in Canadian cheese factories. In the first place, the cheese vat is simply a round tin tank somewhat resembling a large weigh can. It has no steam jacket nor other provision for heating. The 'scald,' as it is called in England, is effected by dipping out a portion of the whey at a certain stage, heating it over a fire or with steam, then pouring it back into the vat, and thus raising the temperature of the whole contents. This operation is usually repeated a second time in order to complete the scald. Curd knives somewhat similar to Canadian knives are used. The peg curd mill is almost universally used in Somerset. The acidimeter is exclusively used to determine the various stages of the process. A sufficient quantity of rennet is added to the milk, at a temperature of 84 degrees, to effect complete curdling in 45 minutes. The milk is required to show an acid test of ·21 when the rennet is added. The 'cooking' temperature, or highest 'scald,' is somewhat lower than in the average Canadian practice, but this is offset

by breaking the curd very much finer in the whey, and by use of the peg mill, which grinds the curd into smaller particles. Miss Cannon likes to have it take three hours after the rennet is added until the curd is finally removed from the whey, with the acidity at ·17. The curd is milled a short time before salting, when it has become leathery and flakey when torn asunder. It takes about three hours from the time the whey is removed until the curds are put to press. The curds are salted at the rate of 2½ pounds of salt to 112 pounds of curd. (About 2¼ pounds per 1,000 pounds of milk.) The cheese remain in the press two or three days.

The cheese are cured at 60 to 65 degrees, and are kept in the curing room for two or three months. It may seem rather curious to Canadian cheesemakers to be told that these cheese are made on what is known as a 'quick ripening' system in England, which only goes to prove that such terms are merely relative. All the cheese examined at the school were of fancy quality, showing a fine, waxy texture, and a delicious 'cheesy' flavour.

These notes are written as a matter of interest to Canadian cheesemakers and not with a view of suggesting that the practice outlined should be adopted in any way.

I did not find that the Somerset makers had any greater technical skill than well trained Canadian makers have—they probably have less—but they have better material to work with, i.e., milk in better condition, and they are much more thorough and careful in their methods. The question of sanitation receives more attention than it does from Canadian makers.

The next point of interest was the old village of Cheddar, which is not now a cheesemaking centre, but is the resort of a large number of tourists who go there to see the extraordinary cliffs and the wonderful caves in the limestone rocks adjoining the village.

SHEPTON MALLET SHOW.

It was our good fortune to visit the district when the Mid Somerset Agricultural show was being held at Shepton Mallet. An introduction to the president and secretary secured for us every attention and courtesy at their hands, and the writer was enabled to inspect the large exhibit of cheese and butter with every facility. (Plate IX.)

There were over 1,000 full sized Cheddar cheese on exhibition, besides numerous half loaf cheese and also a large class of Cærphilly. There was one prize for the makers who had not taken a first prize in any class at the society's show during the past three years. This class showed the largest number of entries, although the prizes were not as large as they were in the open classes. The most striking characteristic of the cheese at this exhibition, as well as of those which were seen in the various dairies, was the remarkably fine flavour. The Somerset cheesemaker is not content with the mere absence of bad flavour, his cheese must have a positive quality as well as a negative quality and a decided 'cheesy' flavour is considered essential for a strictly fancy cheese. The cheese are not so uniform in size, appearance or quality as one would find in a large exhibition of Canadian cheese, and I think possibly some of the cheese were quite as inferior as anything which would be seen at a similar exhibition in Canada.

SOME IMPRESSIONS.

By way of summary the following impressions may be recorded as a result of this brief visit to the home of the Cheddar cheese, taking into account at the same time information gleaned from other sources.

The most striking characteristic of the finest cheese made in Somerset, or anywhere in Great Britain for that matter, is the typical cheese flavour, sometimes spoken of as a 'nutty' flavour, and the absence of objectionable taint of any kind. In

trying to account for this superiority, one must take note of the alleged special fitness of the soil and herbage of England and Scotland, although it cannot be said that this point has been clearly established. It is claimed, however, that certain farms have been noted for producing a specially fine quality of cheese, while every effort has failed to produce similar results on certain other farms.

These finer distinctions are lost sight of in the factory system, where the milk from several farms of different character is mixed together, and while it tends to uniformity of product, it probably does not permit of the individual excellence which some of these farm dairies reach.

Mention has already been made of the exceptional prices obtained for the product of certain dairies. A point worth noting in this connection is the fact that articles of the highest excellence of quality always command a price out of proportion to the actual superiority which can be discerned. The demand of the connoisseur, who is determined to have the very best, gives the highest quality of cheese an adventitious value, which is sometimes not justified by intrinsic worth. Thus we find that there is a much wider range of prices for cheese all of which will pass as first grade, than there is between the average price at first grade and that which is inferior. This shows how foolish it is for a maker of the factory management to be satisfied with producing cheese which merely 'pass' as first grade.

It is true that the factory does not always receive the full advantage which should come from having turned out a superior article, but that is due to the fact that a reputation must be earned and established before the full benefit can be reaped.

While Canadian factories can never hope to secure the high prices that have been quoted herein, there is hardly a factory in the country the product of which could not be improved in value, if due attention were given to certain details in the production of the milk and in the manufacture of the cheese itself. Let us see, then, what are the means employed by these old country dairymen to secure these special results:

(1) They give careful attention to the pastures and keep them free from noxious herbage in the shape of weeds, &c.

(2) Milking is done under strictly sanitary conditions, avoiding contamination with germ laden dust, foulness of any kind in the surroundings, or the use of improperly cleansed utensils.

(3) The night's milk is cooled in warm weather.

(4) The dairy (cheese factory) is well constructed, perfectly drained, and is kept scrupulously clean.

(5) The cheesemaker is qualified and takes sufficient pride in his or her work to do his or her best every day.

(6) The cheese are cool cured and are not offered to consumers in an unripened condition, and before they have developed the typical cheese flavour.

It must be admitted that when there are 50 or 100 patrons to deal with, and the milk is exposed in so many different ways, the problem is a much more complex one, and therefore much more difficult of solution with us than it is with those dealing only with the milk of a single herd. But we must have some ideal if we are to make progress, and for those who do give attention to these details the reward is sure and substantial.

MEETINGS IN GREAT BRITAIN.

Invitations were received from the Manchester Produce Association, the Glasgow Provision and Fruit Trades Association and the Liverpool Produce Exchange, to give addresses before the members of these associations. Needless to say these invitations were gladly accepted. There was a good attendance of members, many of whom took part in the discussions, thus adding very much to the interest and usefulness of the meetings. These gatherings afford excellent opportunities for removing wrong impres-

sions, and for getting new ones from the point of view of both the Canadian producer and the receivers in the old country. It was gratifying to observe the cordial feeling which exists towards Canada, and things Canadian, and while it was frequently asserted that sentiment did not count in matters of trade, one could not help feeling that the large place which Canada now occupies in the minds of the people in Great Britain is a strong, though possibly unconscious, influence towards increasing and strengthening our trade with the mother land.

In the discussions at these meetings the following points were emphasized: (1) that it will check consumption and injure the trade seriously to ship cheese in a green condition, (2) that during the last year or so there has been a heavy loss from short weights, and that importers will have to protect themselves against such loss by having a wider margin on their purchases, (3) that cool curing is a great benefit to Canadian cheese and (4) that the British market will take largely increased quantities of all Canadian produce, including bacon and eggs and fruit, if only the quality is of the best.

The more familiar one becomes with the whole question of supplying Great Britain with food stuffs, the stronger must become the conviction that the great desideratum is to have only goods of choicest quality to offer. If we make sure on that point, all other difficulties will very largely disappear.

FACTORY BRANDS ON CHEESE AND BUTTER PACKAGES.

The advisability of each factory placing its own brand on every box of cheese or butter was frequently discussed with importers. Opinion is somewhat divided on this point, but the majority evidently prefer to depend on the Montreal shippers' brand. While it would appear to be an advantage to a factory which produces a uniformly fine quality of cheese or butter to sail under its own colours, especially if the factory be a large one, as a general rule there is nothing gained in the use of a factory brand unless there is discrimination in its application to prevent it being put on anything but No. 1 quality. A brand which is found on cheese or butter of both good and bad quality cuts both ways and has no value. For the small and irregular lots of cheese, of which we have so many in Canada, the shippers' brands which are now pretty generally used, seem best adapted to meet the needs of the situation. The Canadian exporter establishes brands for cheese of certain characteristics as well as for particular grades of quality and then sorts his numerous lots accordingly. He is bound to keep up the standard for each brand if he wishes to retain the confidence of his correspondents, and the result is that business is facilitated and fewer misunderstandings occur than if the cheese were exported under factory brands only.

The attempts to establish district brands can never serve any good purpose unless great care is exercised in the use of the brand. The so-called 'impress' brands which are applied indiscriminately, have little or no value for the reasons already given. Take the 'Brockville' brand, for instance. While some dealers express satisfaction with the quality, others have told the writer that they would not buy any more of these cheese because 'the last lot was very inferior.' Curiously enough, the cheese bearing the 'Brockville' brand are more generally known as the 'stamped' cheese than as 'Brockvilles.' As a matter of fact, the words 'Brockville' and 'Ingersoll' and some others, have come to signify a certain grade of quality or character of cheese rather than locality of origin.

THE DATING OF CHEESE.

It was frequently represented to me that all Canadian cheese should bear an indelible mark showing month of manufacture. It was charged that orders for

September cheese are sometimes filled with cheese manufactured in other months. My replies to these representations are summed up in a letter which I addressed to *The London Grocer* on the subject, as follows:—

'First allow me to quote the Canadian law as it bears on this question:

"No person shall knowingly and with intent to misrepresent, sell, or offer, expose or have in his possession for sale, any cheese or butter represented in any manner as having been made in any month other than the month in which it was actually made."

'I believe this law was enacted for the purpose of preventing as far as possible any practice which might have a tendency to destroy confidence on the part of the old country merchant, and I am heartily in sympathy with any movement or action having that object in view.

'I do not believe, however, that the month of manufacture is a proper basis for the determination of values, because it does not represent anything which has to do with the intrinsic quality of the cheese. September-made cheese have been appreciated in the past because on the average the climatic conditions during that month have been favourable for curing cheese in the ordinary curing room so as to give the cheese the character most desired. It is a great mistake, however, to suppose that all September made cheese are better than those made in any other month. No greater fallacy could be entertained. It has often happened that the cheese made during the month of August, as a whole, were quite as good as those made in September of the same year. The same can be said for at least the first half of October.

'New Zealand cheese are not classified, as far as I am aware, according to month of manufacture, for the very good reason that climatic conditions in that country do not vary sufficiently during the cheesemaking season to materially affect the curing. The cool curing movement in Canada is intended to overcome the defects in hot weather cheese, and when it becomes general, as it will, such variations of quality as are due to climatic conditions, and the defects caused by high temperatures, will very largely disappear.'

OTHER REASONS FOR DATING CHEESE.

If the practice of shipping green cheese is persisted in by the producers and exporters, it is possible that the compulsory marking of every cheese and every box containing cheese with the day and month of manufacture, may be found to be the most practicable and effective means of putting a stop to it. There is this also to be said, that if the cheese were marked with the date of manufacture, the prejudice against the cheese made in certain months of the year would very soon largely disappear.

CANADIAN FRUIT IN GREAT BRITAIN.

The close of the season of 1906 found the apple trade in fairly satisfactory condition and importers and receivers generally expressed themselves as pleased with the improvement which had been made in the packing and grading under the operation of 'The Fruit Marks Act.' There was a decided note of increased confidence in the expressions of those with whom the subject was discussed. That this confidence has been somewhat disturbed by the unsatisfactory experiences of some receivers of the crop of 1907 is evident from the reports which have come to hand and the communications which have been received on the subject. It is to be regretted if the progress which has been made toward putting the apple business on a more stable basis has received even a temporary setback. The situation affords a striking object lesson for Canadian orchardists of the necessity for better organization on their part, and points plainly to the advisability of the growers assuming a fuller control over the preparation of their product for the market.

Interviews with the Fruit Brokers' Associations at Liverpool and Bristol and with other receivers at Glasgow and London brought out the opinion that the sale of Canadian apples could be largely increased if a good standard of quality and honesty of packing are maintained. It was continually asserted that there is no market for inferior fruit and the experiences of the past season certainly confirm this view. The demand for choice apples in boxes appears to be growing, although the auction rooms naturally discourage the use of this package. The London market, being more accustomed to variety of package, is probably more favourable to the box than any of the other centres.

AUSTRALIAN SHIPMENTS.

The Australian shipments are increasing and although they arrive during the 'off' season for the northern hemisphere, the competition is being felt to some extent. The state of Tasmania especially is giving considerable attention to apple growing. The largest shipment of apples ever landed in Great Britain from one steamship came from Tasmania during the past season. The quality of their apples does not come up to the Canadian standard, but like Australasians generally, the Tasmanians apparently recognize more fully than Canadians do that it is bad policy to export anything of an inferior character, and at the same time they give careful attention to packages and the packing. This is a hard kind of competition to meet, and the comparisons which are made, even though the apples are not on the market at the same time, are detrimental to the Canadian trade. Northern Italy is now sending some apples to the London market. These are not shown in the table of imports, probably because they arrive from some port in France and are thus credited to that country.

Table I. shows the importation of apples into the United Kingdom by countries for the years ending December 31, from 1903 to 1907.

TABLE I.—IMPORTS OF APPLES INTO GREAT BRITAIN FOR THE YEARS 1903-7 (ANNUAL STATEMENT OF THE TRADE OF THE UNITED KINGDOM.

	1903.	1904.	1905.	1906.	1907.
	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
From Germany	20,738	5,264	5,198	19,545	5,152
" Netherlands	49,086	20,541	49,317	23,645	34,009
" Belgium	112,688	171,407	46,775	46,967	66,259
" France	48,976	45,151	107,745	21,250	21,630
" Portugal	203,400	126,566	100,708	108,302	68,657
" Spain	10,110	1,267	63,614	11,060	40,266
" United States of America	2,381,619	1,850,037	1,631,819	1,407,645	1,413,231
" Other foreign countries	1,711	701	252	231	429
Total from foreign countries	2,828,328	2,220,934	2,005,428	1,638,645	1,649,633
From Channel Islands	9,861	8,438	20,713	13,548	7,582
" Australia—					
Western Australia				62	491
South Australia (including Northern Territory	11,842	31,664	24,228	18,841	9,079
Victoria	29,373	22,650	23,018	20,783	40,523
New South Wales		2,278	176	270	709
Tasmania	144,678	277,367	173,284	117,577	229,331
" Canada	1,545,455	1,208,409	1,247,766	998,937	1,588,603
" Other British possessions	9	41	47	69	281
Total from British possessio	1,741,218	1,550,847	1,489,232	1,170,087	1,876,599
Total	4,569,546	3,771,781	3,494,660	2,808,732	3,526,232

FRUIT PULP AND CANNED APPLES.

My attention was drawn to the large demand for fruit pulps of various kinds, and especially for raspberry pulp. A Glasgow firm imported last year some 250 tons of this

pulp from Tasmania. Some criticism was heard of Canadian canned apples, the complaint being that different varieties were often found in the same can, with the result that owing to different cooking qualities, one kind is reduced to pulp, while others are underdone.

PEARS.

There is undoubtedly a good market for pears in Great Britain. Several shipments of Bartletts were made last year to Glasgow, Liverpool and Manchester, and turned out very well. The greatest difficulty in the way of successful pear shipments at present is in securing cold storage for comparatively small lots. If the quantity is large enough to fill or nearly fill a chamber, it is very easily arranged, but as the smallest chambers hold about 2,000 pear cases it will easily be understood that with shipments of a few hundred cases the difficulty is a serious one. It would seem to be a case where combination among shippers would work to advantage.

THE CIDER INDUSTRY.

There is a large quantity of inferior apples produced in Canada every year which might well be utilized in the manufacture of cider. If these inferior grades of apples were utilized in this way the export stock would be correspondingly improved, very much to the advantage of the trade. There is not, at present, a large demand in Canada for fermented cider as a beverage, but undoubtedly the demand would increase if a good article were more generally available, because it is a pleasant, wholesome beverage.

Cider is the fermented juice of the apple. Unfermented or sterilized apple juice is not cider in the strict sense of the term. A considerable quantity of apple juice is made in Canada, some of which is consumed while fresh, a portion is made into cider vinegar and a comparatively small quantity is fermented, more or less perfectly, and converted into cider. The methods which are employed by cidermakers in Canada, are for the most part crude and unsanitary to a degree which makes successful cidermaking an impossibility. The process is one of fermentation, due largely to the yeasts which have their natural habitat on the skin of the apples. Foreign fermentations arising from moulds or other germs which have been encouraged by lack of cleanliness in the handling of the apples, or in the care of apparatus and premises, make it impossible to produce a good article.

Cider has been made for centuries on farms in the western and southwestern counties of England, and it was with a view of learning something of the conditions under which cidermaking is carried on there that the writer made some inquiries on the subject.

English cider is made very largely from apples which are grown specially for that purpose. The fruit is very small and is known as 'bitter' or 'bitter sweet,' according to the amount of tannin and malic acid which it contains. These so-called 'vintage' apples are grown extensively in Hereford, Gloucester, Somerset and Devon, and these are the principal cider making districts. In Norfolk and other eastern counties, the culinary or edible varieties of apples are used to some extent. There is a difference of opinion among cider authorities as to whether as good cider can be made from the ordinary apples as from the vintage varieties, but it must be admitted that the advocates of the vintage fruit seem to have the best of the argument. In France, where cider has probably been brought to the highest degree of perfection, the seedling or vintage apple is the favourite. One authority took this view of the matter, namely, that the connoisseur prefers the fuller and more pronounced qualities of the vintage cider, while a person not accustomed to drinking it would prefer the cider made from culinary or eating apples. The cider is practically all made on farms

in England. In many cases it is intended only for home use, and is a very common drink for farm labourers in the summer months. It is frequently specified in the terms of engagement that the labourer is to have free cider. They want something that 'scratches' as it goes down. It is quite possible that those who provide this cider have their own reasons for preferring the coarser quality, because it no doubt goes much further than a sweeter or milder quality would.

The question for Canadian apple growers is not, however, whether vintage fruit is better than the ordinary varieties, but whether the inferior grades of the culinary or eating apples can be turned into a marketable cider at a profit.

A considerable quantity of Canadian cider has been imported into England and used for blending with the stronger vintage cider of Hereford and Gloucester. It is reported to have given good satisfaction for that purpose. A Norfolk county firm made cider from Canadian apples a few years ago and they claim that the quality was excellent, judged according to English standards.

There is a market for a large quantity of good cider at 16 or 17 cents a gallon, and probably more, delivered on the quays at English ports. The through freight rates from Western Ontario points to Liverpool range from 33 to 37 cents per 100 pounds, or including the weight of the barrel, about 4 cents per gallon.

The yield of cider should be from 8 to 10 gallons per barrel of apples, according to the composition of the apples and the efficiency of the methods employed for extracting the juice.

Suitability of apples for cidermaking depends on the proportion of at least three constituents, namely, sugar, acids and tannin. The French include mucilaginous substances in their estimate. During the process of fermentation, the sugar is converted into alcohol and thus gives strength and stability to the beverage. The tannin is the substance which imparts a bitter taste to apples and tends to pucker the mucous membrane of the mouth. Its action in cidermaking is to coagulate the albuminous constitutents of the apple and thus it helps to clarify the juice. It also has some effect in preventing too rapid fermentation and adds to the soundness and keeping quality of the cider. The acids, chiefly malic, give a refreshing quality to the cider which is important, especially in warm weather.

It is not at all likely that cidermaking will be developed to any extent on farms in Canada as it is in England and France. Labour and other conditions favour the factory plan in the same way as the cheese factory and the creamery have taken the place of the private dairy.

THE NATIONAL FRUIT AND CIDER INSTITUTE.

The National Fruit and Cider Institute at Long Ashton, near Bristol, was established about six years ago for the purpose of carrying on investigations with the object of 'reducing the manufacture of cider to a definite method and system.' The institute receives financial support from the Board of Agriculture and the Bath and West Society. The director, Mr. B. P. T. Barker, M.A., was absent on sick leave when the writer called, but the man in charge did everything possible to make the visit interesting and instructive. The science and art of cidermaking are here receiving careful study and investigation. The influence of the composition of the apple and the apple juice on the quality of the cider is studied by making cider from single varieties of apples in conjunction with full analyses at the different stages. The writer had an opportunity of sampling some twenty-five or thirty ciders from as many different varieties of apples, in which there was found a wide difference in quality, but very few, if any, were as good as those ciders which were the result of blending two or more varieties. It is recommended that each variety of apples should be worked up separately, so that the composition of the juice and cider may be determined and thus permit of scientific and accurate blending after fermentation.

The manufacture of perry (from pears) which is quite an extensive business in the southwestern counties, is also studied at Long Ashton.

THE INTERNATIONAL DAIRY CONGRESS AT THE HAGUE.

The writer had the honour of representing Canada at the great International Dairy Congress at The Hague, September 15 to 20.

THE ORGANIZATION AND ORIGIN OF THE INTERNATIONAL DAIRY CONGRESS.

As this was the first congress at which Canada has been represented, it may be interesting to give a short account of the origin of these international dairy congresses and of the International Dairy Federation, which undertakes their organization. The first congress was held in Brussels in 1902, through the initiative of the National Dairy Society of Belgium. This conference was semi-official, the Belgian government having been requested to invite foreign countries to send representatives. The outcome of the meeting was the organization of the International Dairy Federation with the following constitution:—

STATUTES OF THE INTERNATIONAL DAIRY FEDERATION.

Establishment.

Art. 1. On the initiative of the First International Dairy Congress an International Dairy Federation was established.

Object.

Art. 2. The object of the International Dairy Federation is:

The promotion of scientific and technical interests of dairy work, by:

1. Continuing in the scientific advance in dairy work, to undertake the study of various matters relating to technical dairy work regarded from different points of view.

2. By taking the initiative in advancing scientific measures and thus ensure regular advancement of the trade in dairy produce.

The International Dairy Federation does not interfere in the different countries in circumstances of an internal nature.

Means.

Art. 3. To attain its object the International Dairy Federation will adopt the following measures:

1. The International Dairy Federation shall organize international dairy congresses. These congresses shall successively be held in various countries. At the congress problems of actual interest in regard to dairy work shall be discussed.

2. The International Dairy Federation shall use its influence with the government towards the conclusion of international conventions; in these international conventions regulations shall be laid down by the different countries for the purpose of checking fraud and ensuring the purity of the product from a hygienic point of view.

3. The International Dairy Federation shall organize international exhibitions (in connection with the congresses).

4. The International Dairy Federation shall issue rewards for such works as are highly meritorious from their importance in the advancement of dairy work.

5. The International Dairy Federation shall in the chief markets establish special committees under its own control, whose duty it shall be to enlighten the international market on the selling conditions in that centre.

6. The International Dairy Federation shall issue a bulletin keeping the members acquainted with the doings of the Federation. If possible also a report shall be issued containing a notice of discoveries and applied inventions, the course of the international butter market and information relating to the condition of the market.

Members.

Art. 4. The Federation consists of:

1. Dairy associations.
2. Ordinary members.
3. Honorary members.

Art. 5. The dairy associations may be represented in the Federation by one or more delegates; the contribution is 10 guilders (16s. 8d.) for which they have the right to send one delegate. For every additional delegate an extra annual contribution of f. 2.50 (4s. 2d.) shall be paid.

The working members pay an annual contribution of f. 2.50 (4s. 2d.) towards the general expenses besides the costs of printing and circulation of the reports issued by the Federation.

The contributions shall be sent directly or through the national committees to the central treasury.

Resources.

Art. 6. The resources of the Federation consist of:

1. Members' contributions;
2. Donations;
3. Subsidies from the governments.

Committee.

Art. 7. The International Dairy Federation shall be represented by a permanent international committee and by the national committees which have been constituted in the different countries and have joined the Federation.

Art. 8. The permanent international committee is established at Brussels; it consists of ordinary members, honorary members and five secretaries.

The ordinary members are chosen by the national committees; each committee appoints a representative, who represents his country.

The president is chosen by the ordinary members of the committee.

The honorary members, to an unlimited number, are chosen from persons of various countries, who have done service in matters relating to dairy work.

The secretaries shall be appointed by the international committee, one of them acting as secretary-general.

The ordinary members and the secretaries only have a vote.

The international committee provides for the good management of matters relating to the Federation.

From the international committee an executive committee is chosen, consisting of the president, the secretary-general and the Belgian member.

The executive committee manages all matters arising between two successive meetings of the international committee.

It is authorized to act quite independently, provided its decisions be approved at the first subsequent meeting of the international committee.

Resolutions, however, only become definitively effective after approval at the first subsequent international dairy congress.

Art. 9. The national committees are constituted in every country in accordance with special local regulations.

Where there is no national committee in any country, the committee of the International Dairy Federation shall assume the initiative in establishing such a committee and towards the temporary indication of a representative who shall represent that country on the committee.

Art. 10. The committee shall meet at least once a year, upon the summons thereto from the president, to decide upon all measures that may be adopted in the interest of the Federation.

All correspondence should be addressed to the secretary-general.

Art. 11. The authority of the permanent committee lasts throughout the period falling between two successive international congresses.

The members are eligible for re-election.

The permanent committee of the International Dairy Federation has its headquarters in Belgium, under the presidency of Baron Peers Van Neiuwburg. National committees have been appointed in all the principal dairying countries of the world. The writer has been named as the Canadian representative on the British committee.

The Second International Dairy Congress was held at Paris in October, 1905. It was organized by the French committee of the International Dairy Federation and was held under the auspices of the French government, which gave a special grant towards the expense, and invited foreign countries to send official delegates.

The third and last congress held at The Hague, September 15 to 20 last, under the auspices of the Dutch government, was organized by the Dutch committee of the International Dairy Federation.

The programme of the congress, which follows, will indicate the scope of the papers and discussions.

PROGRAMME.

1st Section—Legislation and Regulations.

1. Uniformity of chemical methods for the examination of milk, butter and cheese.

2. Uniformity of methods of control of milk and milk products (other than butter and cheese) in the places where they are produced and in the market.

3. Butter control.

4. Cheese control.

5. Dairy control: by whom should it be exercised and to what shall it relate?

2nd Section—Hygiene.

With subdivision 'Veterinary Problems.'

1. Conditions to be imposed on the sale of milk wholesale and retail.

2. Conditions to which milk must conform if intended for use as such, and especially as food for children.

3. 'Pasteurization' of milk in the creameries and the conditions under which pasteurized buttermilk is to be returned to the producers.

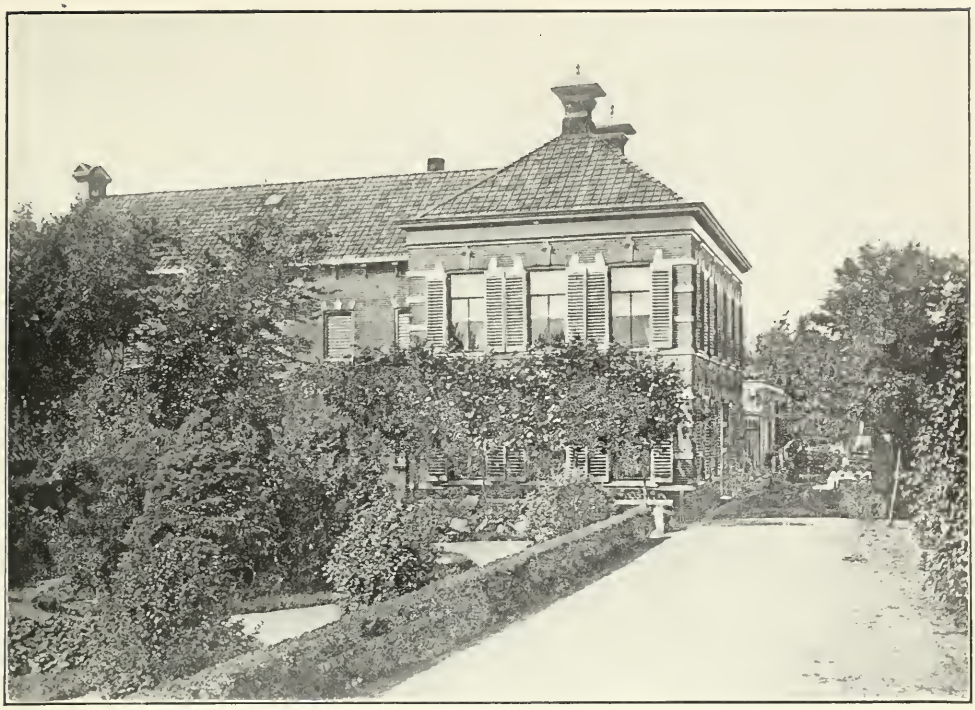
4. Sterilization of milk for preserving purposes.

5. 'Gouttes de lait.'

6. Sanitation of cowhouses in connection with the production of milk.

7. Danger of milk from cows submitted to the tuberculine test and which were thus found tuberculous.

Combined cheese factories and creameries in Friesland, Holland (co-operative).



Combined cheese factories and creameries in Friesland, Holland (co-operative)

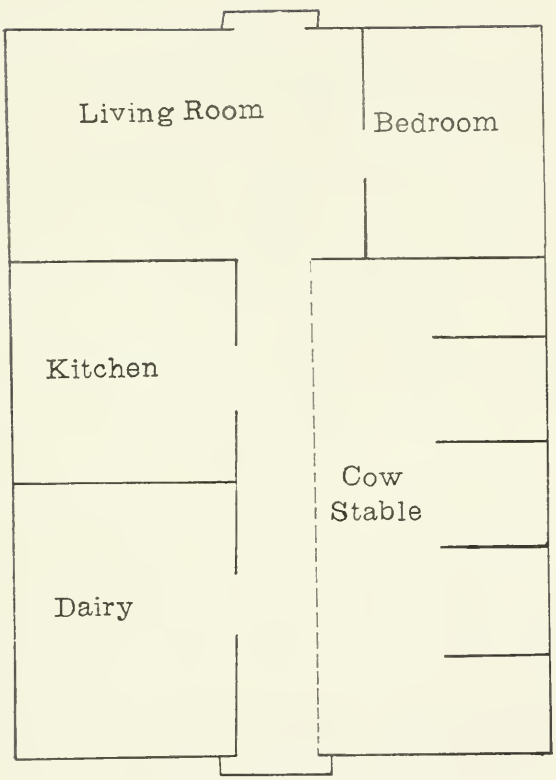


FIG. I.—Arrangement of an old Dutch Farm House.

3rd Section—Industry.

1. Pure ferment 'cultures' for the manufacture of butter and cheese.
2. Causes which influence the proportion of water in butter.
3. Preservation of butter.
4. Results obtained by application of improvements on the quality of butter.

The following countries were represented officially at the congress:—

Argentina, Sweden, Denmark, Norway, Hungary, Italy, the Netherlands, Belgium, Roumania, France, Austria, Great Britain, Canada, New Zealand, Spain, South Australia, Russia, Switzerland, Germany, Victoria, New South Wales.

In addition to these official delegates a large number of voluntary delegates representing dairy schools and dairy societies of one kind or another were in attendance, making a total of about 600 delegates.

The official language of the congress was French, but discussions were carried on in German, Dutch, English and French, and a summary of each day's proceedings with the full text of all resolutions was printed in both French and English and distributed the following morning.

The sessions of the congress were held in the various halls of the Kursall at Scheveningen, a suburb of The Hague, and a famous watering place. The opening ceremonies were attended by the Prince Consort, several diplomats, and members of the Dutch government and many other notable people.

The British delegates held a meeting before the congress opened and appointed a special committee to follow the proceedings of the congress, in its different sections, and to report from time to time to the whole body of delegates on anything which came up of special interest to the British delegation. The following gentlemen comprised this committee: J. Lloyd-Baker (chairman); Hon. T. W. Tavener, Victoria; Hon. W. P. Reeves, New Zealand; J. A. Ruddick, Canada; A. E. Balleine, Board of Agriculture, London; E. C. Trepplin, secretary.

The chief interest in the discussions centred around two points, namely, the control of the manufacture and sale of butter in countries where the manufacture and sale of margarine are permitted and where there is some difficulty in preventing adulteration of butter; and the question of regulations dealing with tuberculosis. As Canadian delegate, the first question was not of very much interest to me, as we have settled all such matters of control in this country by prohibitory legislation. The papers were all printed in French and English before the congress opened, so that delegates had an opportunity of studying them with a view of taking part in the discussions.

The findings of the congress were embodied in resolutions which were proposed by the various sections, and finally passed at the last general session of the congress. It will be seen that the resolutions are not very decided on any of the points raised. There seemed to be a tendency to amend and modify so as to satisfy all parties until in the end most of the resolutions were pretty much neutralized.

RESOLUTIONS ADOPTED BY THE THIRD INTERNATIONAL DAIRY CONGRESS.

1st Section—Legislation and Regulations.

The Congress adopts the principle of unification of the methods for analyzing milk and its sub-products and recommends all countries to adopt the method employed by Leffman-Beam for the determination of the Reichert-Meissl figure in butter fat.

The Congress is of opinion that it is necessary to make the control of milk efficient during all its processes from the milking until it is sold and

consumed, and expresses the opinion that a control should be established based on principles which, although general, may be differentiated according to the local customs in different countries and according to the different qualities for pure milk, at the same time not prohibiting the consumption of any milk.

The Congress, considering the importance of public hygiene and the principles involved, is of opinion that supervision in the dairy should be generally adopted; that, however, the interested parties should previously or simultaneously be convinced of the necessity of such supervision, and that they should be encouraged to adopt all necessary measures, but that the provisions should be made compulsory, and that the provisions should involve severe penalties in case of serious negligence.

The Congress, considering the great importance of the dairy industry from an economical point of view, is of opinion that in those countries where it would be in accordance with the customs and habits of the country, the government should from an economical point of view establish a compulsory supervision, but on the contrary, in countries in which such intervention would be impossible or unpopular, the creameries themselves should organize an economical control service as general and complete as possible; that the public authorities should encourage by subsidies the organization of independent control, and if necessary promote the observance of its provisions; that it is necessary to call frequently together the persons charged with this control, more especially with a view to establish general principles and as far as possible to maintain a certain unity of action and of technical as well as of economical organization.

The Congress is of opinion that the countries represented at the congress must prohibit the importation:

1. of all butter coming from such countries, which have not rendered it obligatory to add latent colouring material to all fats that could be mixed with butter, or which have not adopted an efficient system of control in order to guarantee the purity of butter;

2. of all butter, not bearing a guarantee mark, and coming from countries which have an efficient system of control to guarantee the purity of butter.

The Congress takes note of the following written statement of the English members:—

'There is no guarantee against the importation of adulterated butter, except by prohibiting the importation of all butter which is not made under the supervision or inspection of the government of the country of origin.'

Further note is taken of Mr. Harald Faber's amendment to the above written statement, reading as follows:—

'And which does not bear any mark showing that the butter has been subjected to such control.'

The Congress takes for notification the following statement of Mr. Hoffer:—

'In making legal measures to regulate the butter trade—which is a matter of international character—the idea and the meaning "butter" must be exactly defined and legally be determined as a definition of origin.

'Butter is the nourishing fat of exclusively animal origin, which is obtained by churning cow's milk.

'The use of the term butter for eatable fats of other origin is to be prohibited by legal measures.'

The Congress expresses the desire that in view of the importance of cheese making and the promotion of honest trade in those countries where cheese is made, measures should be adopted to guarantee the purity and the quality of the product.

The Congress expresses the desirability that the president of the permanent bureau of the International Dairy Federation shall take the neeessary steps to have a speeial seetion added to the programme of the Fourth Dairy Congress at Budapest, relating to politieal economy, namely, with regard to the international trade in pure milk—either sterilized or pasteurized—in butter and in cheese and with regard to the advocacy of sueh trade.

2nd Section—Hygiene.

The Congress is of opinion that the veterinary, the ehemical and the bacteriological control must be generalized as much as possible.

The Congress is of opinion that the retail trade in milk must be eonfined to speeially lieensed localities, in which no other artieles are sold than milk or food products which are not detrimental for the milk.

The Congress is of opinion that producers and eonsumers in all eountries should be eonvineed of the necessity to avoid all sourees of infection of the milk.

The Congress is of opinion that the milk destined for eonsumption in its raw state, and espeeially that for infants' food, must be supplied from healthy and well fed eows whieh have been milked dry; further, that it should be well cooled after milking and be of a normal eomposition.

The Congress is of opinion that publie authorities should endeavour to eradicate tuberculosis, and for this purpose to institute veterinary supervision of cattle as well as hygienie supervision of the eowhouses and medical supervision of the persons charged with the milking and with the treatment of the milk at the farms.

The Congress is of opinion that the dairy industry should endeavour as far as possible to avoid middlemen between the produeer of milk and the eonsumer.

The Congress resolves that the following proposition proposed by Prof. Porcher be referred to the next Congress: 'Under the present condition of scienee it may be difficult to solve the problem as to the relative value of sterilized, pasteurized and raw milk. It seems possible, however, to admit that when one has good raw milk, of which the origin is known, it is not necessary to submit it to either of sueh treatments. On the eontrary, it beeomes imperative that such treatment be adopted, when the origin of the milk destined for infant food is not known.'

The Congress being of opinion that milk eoming from dairies whieh have at their command healthy animals and in which all the neeessary hygienic preeautions have been adopted, may be supplied raw, but deems it neeessary from a general sanitary point of view as well as with regard to tuberculous infeetion by means of milk, to reeommend the use of milk which has been sterilized or suffieiently boiled or pasteurized, but by methods the effieieney of whieh with regard to the tuberele bacillus has been scientifically proved, with due observanee of the varying power of resistanee observable with this miero-organism.

The Congress reeommends the method of Dr. Bang for eombatting tubereulosis in eattle where this is applicable; moreover Dr. Ostertag's method of eombatting tubereulosis in eattle by removing sueh animals as are elinically affected and by breeding ealves free from tuberculosis, is practieable in all countries, and it is imperative that the publie authorities without delay take effective steps towards this end.

The Congress is of opinion that the elimination of animals which are aeknowledged to be elinieally affected with tuberculosis and the breeding of

calves free from tuberculosis, retain their importance, even when expectations, based on preventive inoculation against tuberculosis, might have been realised.

The Congress deems it desirable that the bureau of the next International Dairy Congress shall enter into correspondence with the bureau of the International Congress of the 'Gouttes de Lait,' in order to effect a closer relationship than exists at present.

The Congress requests the International Dairy Federation to institute a permanent and independent committee, based upon the legal security in the several countries; this committee to be formed from the delegates of the various countries and shall be charged with the preliminary operations for the solution and practical adoption of great dairy problems of international importance. This committee shall report to the International Dairy Congresses.

The Congress deems it desirable that the question relating to the use of the refuse products of the dairy industry as fodder for milch cows, providing milk for infants, shall be referred to the programme of the next International Dairy Congress.

2nd Section—Hygiene.

Sub-section: Veterinary Questions.

The Congress is of opinion with regard to milk production, that cowhouses should be constructed according to hygienic requirements.

The Congress is of opinion that to encourage the improvement of cowhouses it is highly desirable that cowhouse competitions should be established.

The Congress is of opinion that besides having hygienic cowhouses it is desirable that the milk producing animals be afforded ample opportunity for open air exercise.

The Congress deems it desirable that except where particular circumstances make it impossible, legal prescriptions should be made for the construction of cowhouses and to safeguard the hygienic side of the production of milk in general. The object in view must be that in all countries the building of new cowhouses be only allowed on condition that they answer reasonable hygienic requirements.

The Congress is of opinion that cowhouses should be constructed in such a way that prophylaxis of diseases in general be possible and more particularly to guard against diseases of the udder and to prevent their development. The best method of housing cattle is that adopted in Holland, namely that of a raised flooring. It is recommended that the cowhouses be subjected to disinfection with lime water.

The Congress is of opinion that the veterinary control of cowhouses and milk producing animals must be considered as of great value from a hygienic point of view. It ought to be compulsory in those countries where legal regulations do already exist. This control must be exercised as frequently as possible, but not less than every three months.

The Congress considers the removal of animals with udder tuberculosis and with other clinical forms of tuberculosis as the most important measure to prevent the infection of milk.

The Congress deems it advisable, when milk is wanted entirely harmless in respect of tuberculosis, that such milk be taken from animals:

(*a*) which are free from tuberculosis:
    1. which do not show any symptom of this disease;
    2. which do not react on tuberculine;
(*b*) which are not kept in an infected cowhouse.

The Congress is of opinion that, when milk coming from such animals, which react on tuberculine, is supplied to the public, and still altogether harmless milk is wanted, it is desirable that this should be sufficiently heated before it is used.

3rd Section—Industry.

The Congress is of opinion that the use of pure ferment 'cultures' for buttermaking is essential for rational processes of manufacture, because it permits the conduct of the fermentation of the cream with certainty and method.

The Congress is of opinion that it generally is absolutely necessary to use for the culture of ferments only such seeds as have been prepared in the laboratory under the stringent rules provided by the bacteriological expert.

The Congress is of opinion that it is also necessary to mention the age of the cultures, because of the rapid attenuation to which the milk ferments are submitted under influence of different physical and chemical conditions.

The Congress is of opinion that in order to make experiments in cheese factories, it is necessary to use pure cultures and to eliminate beforehand all the detrimental ferments present in milk. It is desirable to carefully determine the nature of the ferments to be used and the quantity to be added.

The Congress is of opinion that the pasteurization of the milk for cheesemaking must be carried out under special precautions as regards the method employed for heating.

The Congress is of opinion that it is absolutely necessary that laboratories give every assistance to the cheese factories and that they on the other part can be assured of finding collaboration and the support which has hitherto never been withheld.

The Congress is of opinion that the factors influencing the quantity of water in the butter are chiefly:

(*a*) the temperature when churning;

(*b*) the degree of density of the particles of butter prior to the removal of the buttermilk; and further;

(*c*) the condition and treatment of the cream (pasteurization, fermentation, acidity, concentration);

(*d*) the method of working the butter (kneading and salting).

The Congress agrees with the wishes embraced in the conclusions of M. Maze. Hence it urges that the dairy instructors and the interested industrial men must keep them well in mind and consider them carefully in order to thoroughly grasp the principles upon which those claims are based, which the butter industry has still to effect.

These conclusions are as follows:

1. The butter industry in connection with its perfect working arrangement is capable of regularly producing a good product;

2. Its cream separators guarantee a proper output; its refrigerating machines permit the exact application of the prescriptions in regard to the temperature which suit best for the method of working followed;

3. Its steam generators facilitate the cleaning and sterilization of the apparatus and implements.

But it is not perfectly familiar with the exact method of securing the good process of fermentation.

As unfavourable factors may be mentioned:

(*a*) insufficient pasteurization, which is often done in a manner contrary to the principles of bacteriology;

(*b*) bad quality (chiefly lack of energy) of the starters supplied by the trade;

(*c*) bad quality of the rinsing water, which frequently causes the butter to become rancid;

(*d*) lack of every supervision in regard to the efficiency of the pasteurization, the purity of the fermentation process and the sterilization of the appliances used for buttermaking;

(*e*) ignorance of the operators, who are unacquainted with the signification of infection.

(*f*) carelessness on the part of the farmers, who do not seriously enough follow the advice given when the advantages of cooling the milk immediately after milking are pointed out to them.

For the executive committee of the Third International Dairy Congress,

DR. A. J. SWAVING,
The Secretary-General.

DR. H. P. WIJSMAN,
The Chairman.

For the permanent committee of the International Dairy Federation,

L. GEDOELST,
The Secretary-General.

BARON PEERS,
The Chairman.

The Dutch government apparently spared no effort to make the Congress a success, and they contributed in many ways to the enjoyment and comfort of the *Congressistes*. The writer is personally indebted to the Hon. J. D. Veegens, Minister of Agriculture, Industry and Commerce; H. S. J. Maas, Esq., Consul General for the Netherlands in London, and Dr. J. J. L. Van Ryn, Friesland Commissioner in Great Britain, for many courtesies and much assistance in the way of getting information.

It was the general opinion of the delegates that the chief value of the Congress was to be found in the intercourse which it permitted between persons engaged in dairy work from all over the world, and in the excursions which enabled the delegates to visit the farms and dairies in different parts of Holland, in which there was much to be seen that was both interesting and instructive.

A DUTCH AGRICULTURAL EXHIBITION.

A large agricultural exhibition was held at The Hague concurrently with the Dairy Congress. Unfortunately, owing to the outbreak of the foot-and-mouth disease, the government would not allow exhibits of dairy cattle, which was a matter of considerable disappointment to the delegates. As dairying is the national industry of Holland, the exhibition was particularly strong in exhibits of butter, cheese and dairy machinery. In the class for foreign cheese, Canada competed with England, New South Wales, New Zealand and Italy, and carried off the first prize. These exhibits were sent by a merchant in London. There was a very large entry of Dutch cheese, principally of the Gouda and Edam varieties. There was also a large exhibit of butter, which was shown in such a way that only the surface of the butter in the package could be seen by the judge or other person examining it. The packages were placed under a sort of closed counter with openings over each package about eight inches in diameter which were kept covered with a piece of glass. The dairy machinery on exhibition was of a very superior character in point of durability, finish and suitability. No question of expense seems to be permitted to interfere with having all dairy apparatus made in the best possible manner.

The agricultural educational exhibits from the various institutions in Holland were the subject of very favourable comment and attracted considerable attention. The thoroughness with which experiments appear to be conducted and the practical way in which the results were shown, called for considerable comment.

NOTES ON DAIRYING IN HOLLAND.

A DUTCH CHEESE MARKET.

An interesting excursion took a number of the delegates to the province of North Holland, by which name the peninsula lying between the North Sea and the Zuider Zee is known. This district is famous for its large output of Edam cheese. Alkmaar is the principal market, but there are also markets at Hoorn and Edam. The quantity of cheese which is annually sold at Alkmaar equals about 200,000 boxes of Canadian cheese, and yet the whole district in which these three markets are located is not much larger than a good sized Canadian county. The cheese are all brought in by barge or wagon from the surrounding country and piled in separate heaps on the square in the market place. If the weather is showery, a tarpaulin is used to cover the cheese. The market officials have the cheese all weighed before the sale takes place. The individual cheese weigh about 4 pounds each, and they are weighed in drafts of about 100 cheese. The weigh house is a very ancient institution in all market towns in Holland, and usually has some very interesting features. (Plate XI.)

AN EDAM CHEESE FACTORY.

A drive through the district brought us to one of the co-operative Edam cheese factories (plate XI.), which are organized on lines very similar to those on which co-operative factories are run in this country, except that the true spirit of co-operation seems to have more place in their management than it does with us. An association is formed to build and operate a cheese factory or a creamery, the members of which give their joint and several note to some bank which furnishes all the money required. There is no share capital, but a certain amount of revenue is set aside each year to pay off the indebtedness.

A DUTCH FARM HOUSE.

During the same drive a visit was made to one of the old farms where the cows are kept during the winter months under the same roof as the family. The accompanying diagram will give an idea of the arrangement of the building. (Fig. 1.) While the cows are on pasture during the summer months, the stable is used as a cheese curing room. The winter's fodder is stored in the loft. The floors of the stable are of tile, the mangers and stalls of glazed earthenware, and everything is kept scrupulously clean. The Dutch passion for cleanliness makes this sort of thing possible.

A MODEL STABLE.

The most interesting and instructive feature of this trip was a visit to the farm 'Oud-Bussem.' (Plate XII.) Here we found 200 cows, kept under the most sanitary and hygienic conditions for the production of market milk. The stable floors are laid with tile, and the walls and ceilings finished smoothly with some kind of white enamel. The drainage and facilities for cleaning are perfect. A tunnel passes under the stable, and through this outlet all droppings are removed by means of a car running on light iron rails. The accommodations for the milkers and the conveniences for securing the utmost cleanliness leave nothing to be desired. A heavy thatched roof makes the building warm in winter and cool in summer. Ample light and ventilation complete one of the finest stables that the writer has ever seen. The surroundings of the stable are laid out in lawns, with flower beds and shrubbery, and the whole place is attractive in the highest degree. The milk of the herd is bottled and shipped to Amsterdam in

very much the same manner as is now followed by the best dairies in this country. We were not allowed to enter the stables where the cows were, for fear of carrying the infection of the foot-and-mouth disease, but there was plenty of opportunity to view the interior through the open doors and windows.

AN ANCIENT DWELLING.

During a trip through the province of Gelderland, the excursionists visited a 'loshuis' or ancient farm dwelling. The 'loshuis' are said to have been built originally by the Anglo-Saxons, the primitive inhabitants of Holland. Like the other Dutch farm houses, they consist of one square building, covered with a high-pointed roof, but they differ to the extent that the various parts of the house are not separated, being, strictly speaking, all in one room. In one side of the building there is a door which gives access to the space in the centre. Around this space, which has no floor, are arranged on one side the cows; on the other side a piggery and horse stable; at the back the space for the family, on either side of which the beds are placed, each in a sort of narrow cabinet. In the centre of the family space there is a fireplace provided with the usual hangers for pots and kettles. Animals and people live there in common. It would be easy to place partitions in these farmhouses to make them similar to the Frisian or other Dutch farmhouses. This building, although kept in a clean condition, presented a great contrast to the elegant Weldan manor house and its beautiful park in the immediate vicinity.

LARGE PRODUCTION PER ACRE.

The total area of Holland is 12,648 square miles, a little over half the size of Nova Scotia, or equal to that part of Ontario lying southwest of a line drawn from the city of Hamilton to Southampton on Lake Huron. The population according to the latest returns is 5,104,137. The total exports of dairy produce for the year 1906 were 66,000,000 pounds of butter and 104,355,600 pounds of cheese. With butter at 22 cents per pound and cheese at 12 cents, the total value of the exports would amount to $27,042,432, or very nearly as much as the value of the butter and cheese exported from Canada during the same period. These figures convey some idea of the enormous production per acre compared with Canada.

On a farm of 105 acres there were found 35 cows, 8 heifers, 25 calves, 2 horses and 25 milk ewes. These animals were fed entirely from the produce of the farm, with the exception of some linseed meal which is bought for winter use. In some of the best pasture districts it is quite common to keep two cows to three acres the year round.

The cow 'Alida' gave in a milking period of 365 days, 21,529 pounds of milk testing 3·09 per cent of fat.

Of course, the pasturage is most luxuriant and abundant and does not suffer from drought, because the water level in the ditches is not, as a rule, more than two feet below the surface of the fields.

The total number of cows in Holland in 1906 was 973,098, a few thousand less than the total number in the province of Ontario.

The average percentage of fat in the milk of the Dutch cows is a fraction over 3 per cent, but the yield of milk is very large.

CHEESE FACTORIES AND CREAMERIES IN FRIESLAND.

The province of Friesland is one of the most important dairying districts in Holland. There are 130 co-operative or semi-co-operative cheese factories and creameries in this small province consisting of 1,282 square miles. (Plates XIII and XIV.) The following description of the co-operative creamery at Uitwellingerga will

indicate the character of these establishments. The building and equipment cost $54,000, for which funds were secured from a bank on the joint and several note of the members of the association. There is no share capital. The indebtedness is being paid off at the rate of about $1,000 annually, so that it will take over 50 years to pay for the building and equipment. It may be remarked in that connection that these buildings are so well put up and so permanent in every respect that they will be practically as good as ever at the end of the 50 years. That is one way in which the Dutchmen show more wisdom than we do in this country. A feature of the business end of the organization is that the patrons vote according to the number of cows from which they supply milk. The quantity of milk received at this factory in 1906 was 9,041,296 pounds from 1,150 cows, or an average of 7,860 pounds each. Both butter and cheese are made on the following plan. The milk is received twice daily. A portion of the cream is removed by a gravity method similar to the old Swedish 'Swartz' system. The cream is skimmed in a sweet condition and pure culture is added to it after pasteurization. The half skim milk thus obtained is manufactured into Gouda and Edam cheese. The patrons receive about $1 per 100 pounds of milk. The cost of manufacturing is about 10 cents per 100 pounds of milk.

BAD WATER SUPPLY.

Probably the most serious drawback which the Dutch dairymen have to contend with is a lack of a good water supply. It is mostly surface water, more or less contaminated with sewage.

AN INTERESTING COUNTRY.

A visit to Holland must always be a delight to an observant person. The student of history will find much that will interest him in the scenes made famous in the long and stirring record of this sturdy and valiant people; the student of art may revel in the wonderful picture galleries, hung with the most celebrated canvasses by the great masters Rembrant, Reubens, and a host of others, and in the quaint but stately mediæval architecture; the engineer will be interested in the great system of dykes by which large areas of the most productive of land have been reclaimed from the seas, and which prevent its encroachment at all times; the student of agricultural economics, particularly in relation to dairying, the national industry, cannot fail to see many things that will interest and instruct him. While it is true that labour and other conditions differ so materially as compared with those which prevail in Canada as to make it impossible for us to copy or adopt much in matters of method or practice, there are many underlying principles in their practices which are worthy of careful study. The true spirit of co-operation has been accepted by these so-called conservative Dutchmen to an extent scarcely thought of by Canadian farmers. The foresight and sense of real economy displayed by them in providing suitable and permanent buildings and equipment for carrying on their business, furnish us with a standing example that should not be lost sight of. There is much to be learned from a visit to the Netherlands.

THE SECOND INTERNATIONAL CONGRESS OF GOUTTES DE LAIT.

(PROTECTION OF INFANT LIFE.)

As this Congress was held at Brussels just before the International Dairy Congress at The Hague, I was instructed to attend it as a representative of Canada. The sessions of the Congress were held in a beautiful hall of the Palais des Academics. It met in accordance with the decision of the First Congress of 'Gouttes de Lait,' which was held in Paris in 1905, and of which it was a continuation, so to speak. The

first 'Goutte de Lait' was organized at Fécamp in 1894 by Dr. Léon Dufour, for the purpose of combatting the excessive mortality of the infants in that city who were artificially nursed, especially those in the poorer classes. Professor Budin had previously, in 1892, established in Paris a 'Consultation de Nourisson.' Dr. Eugene Lust, the secretary of the Brussels Congress, founded an institution in Brussels in 1897, having for its object the prevention of the excessive infant mortality so prevalent in that country, under the name of the 'Laiterie Maternelle' (Mothers' Dairy). These examples were followed and similar institutions were founded successively at Hodimont, Antwerp, Liége, Ghent, Charleroi, and to-day they exist in many localities in Belgium. The Brussels group alone numbers fourteen. These various institutions, which are generally referred to by the name of 'Gouttes de Lait,' have been instituted for the purpose of preventing or decreasing infant mortality by (1) giving advice to mothers, (2) by encouraging breast feeding, and (3) by giving carefully prepared milk to those infants for whom breast feeding is either impossible or insufficient.

It is said that in Belgium at one time one quarter of the 200,000 children born annually, died within a year, but that the percentage of mortality has been very materially reduced since the establishment of these institutions for the education of mothers and the supplying of wholesome milk, especially to the poorer classes.

The delegates to the Congress numbered over 600, and came from 29 different countries.

As the proceedings of the Congress and the questions discussed in the various sections belong to the realm of medical science, or hygiene, rather than to dairying, it does not seem advisable to make any extended reference to them in this report. Those readers who may desire to obtain a full report of the proceedings and papers (in French only) may secure them by applying to the general secretary, Dr. Eugene Lust, Rue de la Limite 27, Brussels, Belgium.

An effort was made to extend the scope of the Congress by the formation of an International Union of Institutions for the Protection of Child Life, with correspondents in practically all civilized countries. Dr. E. Pelletier, 9 St. James St., Montreal, is the Canadian correspondent, and I am sure he will be pleased to give full information regarding this very important movement.

It was decided that in future the congresses should be called 'Congress for the Protection of Infant Life,' with the words 'Gouttes de Lait' as a sub-title.

We have in this movement another evidence of the world-wide awakening to the importance of producing and handling milk under strictly sanitary and hygienic conditions. The old standards are no longer acceptable.

INDEX.

Acknowledgments.. vii
Cold Storage.. vii
Dairy Commissioner, Assistant.. vi
Dairying.. v
Fruit.. vi
Markets, Extension of.. vi
Visits to Great Britain and Holland.. vii

PART I.—DAIRYING.

PAGE.
Buildings, dairy.. 5
Butter—
Composition of.. 16
Defects in.. 11
Exports of.. 18
Exports of.. 21
Grades, advantage of three.. 13
Packages, identification marks for.. 13
Production by provinces.. 4
United Kingdom, quantity imported into.. 23
Cheese—
Composition of.. 16
Defects in.. 9
Exports of.. 18
Exports of.. 21
Factories, total number in Canada.. 20
First exported.. 24
Food value of.. 19
Grades, advantage of three.. 13
Packages, identification marks for.. 13
Production by provinces.. 4
United Kingdom, quantity imported into.. 22
Condensed milk.. 5
Consumption of dairy products, increase in.. 3
Cow testing associations.. 24
Bagotville (St. Alphonse), Que.. 50
Beaverton, Ont.. 36
Brockville, Ont.. 37
Central Smith, Ont.. 38
Chicoutimi, Que.. 51
Chilliwack, B.C.. 44
Coaticook, Que.. 51
Cowansville, Que.. 59
Cowichan, B.C.. 43
Culloden, Ont.. 40
Dixville, Que.. 53

PART I.—DAIRYING—*Continued.*

PAGE.

Eden Bank, B.C. . . . 43
Hatley, Que. . . . 55
Henryville, Que. . . . 50
Keene, Ont. . . . 38
Kinmount, Ont. . . . 36
Lorneville, Ont. . . . 35
Lotbiniere, Que. . . . 49
Mansonville, Que. . . . 53
Milton, Ont. . . . 39
New Glasgow, P.E.I. . . . 43
Oak Leaf, Ont. . . . 36
Ormstown, Que. . . . 50
Oxford, Ont., East and West. . . . 42
Oxford, Ont., North. . . . 41
Pine Grove, Ont. . . . 37
Rockford, Ont. . . . 39
St. Armand, Que. . . . 56
St. Barnabé, Que. . . . 49
St. Dominique (Jonquières), Que. . . . 51
St. Edwidge, Que. . . . 58
Ste. Emelie, Que. . . . 52
St. Jerome, Que. . . . 51
St. Prime, Que. . . . 51
Shearer, Ont. . . . 39
Sheffield, Ont. . . . 39
Spring Creek, Ont. . . . 40
Warsaw, Ont. . . . 37
Woodburn, Ont. . . . 36

Cow testing—
Associations in Quebec. . . . 44
British Columbia, average yield in. . . . 32
Fat, percentage of. . . . 30
Feed. . . . 30
Ontario, average yield in. . . . 32
Prince Edward Island, average yield in. . . . 33
Records, monthly. . . . 28
Value of. . . . 28

Cows, total number in Canada. . . . 4
Creameries, total number in Canada. . . . 20
Dairy buildings. . . . 5
Dairying Industry, the—a lecture. . . . 14
Exports, decline in. . . . 3
Exports of cheese and butter. . . . 21
Imports of butter and cheese into United Kingdom. . . . 22
Legislation. . . . 23
Marks for identification of cheese and butter packages. . . . 13
Milk, condensed. . . . 5
Milk, food value of. . . . 19
Preservatives in. . . . 14
Official Referee of Butter and Cheese. . . . 5
Butter examined by. . . . 10
Cheese examined by. . . . 9
Report of. . . . 9

SESSIONAL PAPER No. 15a

PART I.—DAIRYING—*Continued.*

PAGE.
Preservatives in milk.. 14
Progress of dairying.. 5
Sanitation in the dairy.. 13
Season of 1907.. 3
Statistics.. 20

PART II.—REPORT OF ASSISTANT DAIRY COMMISSIONER.

Agriculture, practice vs. theory in.. 65
Deforestation below Quebec.. 65
Farmers' Clubs, lectures before.. 71
Lectures, table of visits and.. 63
Meetings—
County and district meetings.. 69
Parish meetings.. 71
Provincial conventions.. 64
Office work.. 72
Pulp wood and deforestation below Quebec.. 65
St. Hyacinthe Dairy School.. 71
Summary of work.. 63
Syndicates, inspection of factory.. 71
Tree surgery.. 66
Visits and lectures, table of.. 63

PART III.—FRUIT.

Apples, grading of Canadian.. 87
Brown-tail moth in Nova Scotia.. 85
Crop reports.. 80
Districts of the Dominion, fruit.. 81
Fruit—
Crop reports.. 80
Districts of the Dominion.. 81
Fruit Marks Act—
Convictions under.. 78
Correspondence *re* administration.. 86
Prosecutions.. 77
Grading of Canadian apples.. 87
Inspection of fruit.. 77
Meetings.. 84
Nova Scotia, Brown-tail moth in.. 85
Prices, effects of high.. 76
Prosecutions.. 77
Season, peculiar difficulties of the.. 75
Staff, the.. 75
Varieties, identification of.. 85

PART IV.—EXTENSION OF MARKETS.

Apple trade, export.. 110
Frosted shipments.. 111
Handling of apples.. 111

PART IV.—EXTENSION OF MARKETS—*Continued.*

PAGE.

Bacon trade, export.. 109
Butter—
Export trade.. 106
Iced-car service, drawbacks in.. 94
Iced-car service, season 1907.. 94
Imports into United Kingdom.. 108
Temperatures of dairy butter.. 96
Temperatures of Ontario butter.. 95
Temperatures of Quebec butter.. 97
Cargo inspection—
In Great Britain.. 105
On Montreal docks.. 104
At Quebec and Halifax.. 105
Cheese trade, export.. 108
Fruits, export of tender.. 112
Great Britain—
Cargo inspection in.. 105
Improved port facilities in.. 104
Halifax, cargo inspection at.. 105
Iced-car service for butter—
Drawbacks in.. 94
Season of 1907.. 94
Iced-car services—
Inspection of.. 94
From Western Ontario.. 95
Imports of butter into United Kingdom.. 108
Inspection—
Of cargoes in Great Britain.. 105
Of cargoes on Montreal docks.. 104
Of cargoes at Quebec and Halifax.. 105
Of iced-car services.. 94
Montreal—
Cargo inspection at.. 104
Improved port facilities at.. 103
Quebec, cargo inspection at.. 105
Temperatures of butter—
Dairy butter.. 96
Ontario butter.. 95
Quebec butter.. 97
Season of 1907.. 103
Transportation facilities.. 93

PART V.—COLD STORAGE.

Bonuses for creamery cold storages.. 115
Butter temperatures on board steamships.. 118
Cheese—
Cold storage for.. 125
Coating with paraffin wax.. 126
Storage, use of ice for.. 126
Creamery cold storage bonuses.. 115
Cold stores, sanitation in.. 127

SESSIONAL PAPER No. 15a

PART V.—COLD STORAGE —*Continued.*

PAGE.

Cold storage—
On steamships, products shipped in.. 117
Warehouses in Canada.. 123
Warehouses, subsidies for.. 122
Cooled air service, 1907.. 121
Cooled air space on steamships, products shipped in.. 117
Eggs, cold storage of.. 124
Furs and woollens, cold storage of.. 127
Iced-car services.. 116
Ice, use of for cheese storage.. 126
Ocean cold storage.. 117
Paraffin wax, coating cheese with.. 126
Sanitation in cold stores.. 127
Steamships—
Butter temperatures on board.. 118
Cold storage space from Montreal and Quebec.. 118
Cooled-air service, 1907.. 121
Products shipped in cold storage and cooled-air on.. 117
Subsidies for cold storage warehouses.. 122
Temperatures of butter on board steamships.. 118
Thermographs in steamships, season 1907.. 122
Warehouses, subsidies for cold storage.. 122

PART VI.—VISIT TO GREAT BRITAIN AND HOLLAND.

Apples, imports into Great Britain.. 139
Canned, demand for in Great Britain.. 139
Brands on cheese and butter packages.. 137
Butter—
Canadian in Great Britain.. 131
Packages, branding of.. 137
Butter and Margarine Act.. 131
Canned apples, demand for in Great Britain.. 139
Cheese—
Branding.. 137
Canadian in Great Britain.. 132
Cheshire.. 133
Dating of.. 137
Green.. 132
Prices, cutting of.. 132
Cheesemaking in Somerset County.. 133
Cheshire cheese.. 133
Cider industry.. 140
Dairy Congress, International.. 142
A Dutch agricultural exhibition.. 150
Programme of.. 144
Resolutions adopted.. 145
Dairy Federation, International.. 142
Dairying in Holland.. 151
Fruit—
Australian shipments.. 138
Canadian in Great Britain.. 138

PART VI.—VISIT TO GREAT BRITAIN AND HOLLAND—*Continued.*

PAGE.

Fruit pulp and canned apples, demand for in Great Britain. 139
'Gouttes de Lait,' Second International Congress. 153
Holland, an interesting country. 153
A Dutch agricultural exhibition. 150
Cheese factories and creameries in Friesland. 152
Cheese market, a Dutch. 151
Dairying in. 151
Dwelling, an ancient. 152
Edam cheese factory. 151
Production per acre. 152
A model stable. 151
Water supply, bad. 153
Infant life, protection of. 153
International Dairy Congress. 142
International Dairy Federation, constitution. 142
Liverpool, improved facilities at. 133
Margarine Act, the Butter and. 131
Meetings in Great Britain. 136
Pears, market for, in Great Britain. 140
National Fruit and Cider Institute. 140
Prices of cheese, cutting of. 132
Shepton Mallet Show. 135
Somerset County, cheesemaking in. 133

DEPARTMENT OF AGRICULTURE

CANADA

REPORT

OF THE

VETERINARY DIRECTOR GENERAL

AND

LIVE STOCK COMMISSIONER.

J. G. RUTHERFORD, V.S.

For the Two Years ending March 31, 1908.

PRINTED BY ORDER OF PARLIAMENT

OTTAWA
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1909

[No. 15*a*—1909]

REPORT OF THE VETERINARY DIRECTOR GENERAL.

HEALTH OF ANIMALS AND LIVE STOCK BRANCHES,
OTTAWA, March 31, 1908.

SIR,—I have the honour to present my report as Veterinary Director General and Live Stock Commissioner for the two years ending March 31, 1908.

The period in question has been, from an official point of view, both busy and eventful and it is gratifying to be able to state that the progress made in the development of the live stock industry and in the direction of securing effective control of contagious diseases among our domesticated animals, may fairly be termed satisfactory.

Our animal industry has kept pace with the general growth and prosperity in other lines and although, the season of 1906 was in some districts, far from favourable, there is every evidence of a marked increase in the numbers as well as the value of the live stock of the country.

The continued rapid settlement of the western provinces has had a two-fold effect in augmenting the animal population, as not only have there been large importations by and for the use of our new citizens, but the breeding industry has received a fresh impetus from the ever growing demand for all classes of farm stock.

While, to the careless observer, this activity may appear of little moment, it is in reality a matter of paramount importance to the nation. Our present prosperity is based, to a far greater extent than is at first sight apparent, on the products of the farm, and while among these the western grain crop may just now bulk more largely than any other, it is an old story, scarcely needing retelling, that grain growing, without crop rotation on the use of fertilizers can only be continued for a limited period.

Even on the fertile plains of the west, this rule has full force, as is well known to those familiar with actual conditions, and today, in the older districts of Manitoba, Saskatchewan and Alberta, the best and brainiest farmers are gradually changing their methods and adopting mixed husbandry as the only means of conserving the income earning powers of the land.

Needless to say, mixed farming cannot, under ordinary circumstances, be carried on without animals, so that it is only a matter of time till every one of our western grain farms will either be abandoned to the weeds or maintain its proper quota of live stock.

The older provinces have already learned this lesson and that it has been a profitable one is clearly evidenced by the marked improvement in farming conditions, say in the Western Ontario peninsula, over those prevailing twenty years ago. To state the case in a few words, the good farmer is the backbone of Canada and stock raising is the sheet anchor of good farming.

The live stock industry is therefore one of our most valuable national assets and its present active and prosperous condition should be appreciated accordingly.

Previous to July 1, 1906, the date of my appointment as Live Stock Commissioner, my official duties were confined to the work of guarding, to as great an extent as possible, the live stock of the Dominion from the attacks of the various conta-

gious diseases, to which, from the earliest times, the herds and flocks of the husbandman have been subject.

Until a comparatively recent date, these scourges, like those affecting our own race, were but little understood, being looked upon as visitations of Providence, against which human skill was of little or no avail, but with the remarkable advance in medical science achieved within the last century and particularly within the last four decades, the view point has completely changed, and it is now realized that intelligent effort wisely directed, can do much to prevent their occurence, as well as to modify their ravages.

The work of the veterinary sanitarian has, by these recent discoveries, been rendered much more effective and satisfactory than formerly, especially in the older and more thickly settled countries of the globe, where the conditions are such as to render possible the close supervision and control of live stock.

In Canada, however, and particular'y in the west, the problems which confront our officers are often exceedingly serious.

The somewhat slipshod methods of handling stock which prevail among western farmers and ranchers constitute a heavy handicap to effective quarantine work. Many of these people permit their animals to wander at will, for months at a time, making no attempt at intelligent supervision: Scarcity of feed often gives rise to almost unsurmountable difficulties in maintaining the isolation of infected stock while severe weather such as that experienced during the season just past, makes any attempt at restriction practically impossible, suitable accommodation being frequently entirely lacking.

Under such conditions, disease may and often does become widespread before discovered and reported, while the tracing of contaminated herds or individuals over immense areas of open country, is an almost impossible task.

The situation has, during recent years, been still further complicated by the continuous influx of new settlers, many of whom bring animals with them and whose mode of entry as arranged by the immigration agents and railway officials, namely in large parties, renders it difficult to secure an effective inspection at the boundary.

In some of the districts from which these people come disease is rife and the risk of its introduction is correspondingly serious, but so eager are they to come in, and so anxious are many of our officials, and perhaps from their point of view, properly enough, to get them across the line and to remove all obstacles from their path, that the position of a conscientious veterinary inspector at one of the boundary ports is anything but a happy one.

It is, therefore, not surprising that while the efforts of the Health of Animals Branch to stamp out disease in Eastern Canada have been perhaps more than fairly successful, its work in the west has not so far been, productive of equally gratifying results.

The past two years have, however, been marked by one or two important forward steps in the perfecting of our organization for preventing the introduction of diseased animals and dealing with those already in the country, and I trust that I am not too sanguine when I venture the prediction that even in the face of the adverse conditions to which I have just directed your attention, we will, in the near future, be able to show a clean bill of health from ocean to ocean.

The work of organizing the Health of Animals Branch into an effective disease fighting force has been continued. Owing to the extra duties arising out of my appointment as Live Stock Commissioner and later, in connection with the new meat inspection legislation, it has not been possible for me to devote as much time as in former years to personal work in the field. A tour through the maritime provinces in the early summer of 1906 enabled me to inspect the new quarantine buildings at St. John and Halifax and the Experimental Station at Antigonish, as also to visit

our inspectors at Sydney, Cape Breton, and Charlottetown, P.E.I. Later in that year a hurried trip was made to Chatham owing to a reported recrudescence of hog cholera in that neighbourhood and the opportunity was taken to visit Windsor and Sarnia, two of our most important frontier ports.

During the month of August I attended the annual meeting of the American Veterinary Medical Association which was held at New Haven, Connecticut, and while there read a paper on the control of glanders, the greater part of which is embodied in the special report dealing with that disease, which is issued herewith.

In October a visit was made to Washington for the purpose of conferring with Dr. Melvin, chief of the United States Bureau of Animal Industry, on matters connected with changes in our quarantine regulations regarding the importation of American horses, which have since been put into effect. During the fall and winter numerous trips to Toronto, Montreal and other points were rendered necessary in order to meet the various live stock associations or their representatives, as well as to attend the meetings of the Record Committee on business connected with the National Records.

In February I visited Chicago to complete arrangements for a special course in meat inspection for Canadian veterinarians in order to enable them to qualify for employment under the new Act. This trip was extended to Manitoba, where many local matters received attention and where I also attended the annual convention of the live stock associations and the winter fair, which this year, were held in Brandon. In March I again visited Chicago and had the pleasure of seeing the special course, above referred to, in full swing, and the studies progressing in a very satisfactory manner.

From Chicago I proceeded to Emerson where some matters in connection with the Quarantine Station demanded attention, later visiting Winnipeg where a permanent office is now maintained for the use of both branches, under the general management of Mr. G. H. Greig. This office is the headquarters of Dr. McGilvray, Chief Veterinary Inspector for Manitoba, and of all the officers engaged in the health of animals and meat inspection work in that province.

From Winnipeg I went to Calgary for the purpose of attending the show and sale held there early in April. The occasion was somewhat enlivened by a discussion on the question of the continuation of the grant made by the Live Stock Branch for the support of the show and sale, in view of the fact that the Alberta breeders had passed a resolution prohibiting entries from stockowners outside the province, an action on their part which, in my opinion, warranted the withholding of assistance from your department.

While in the west I visited Macleod and Lethbridge, going carefully over the work being done at the Quarantine and Experiment Station at the last named place.

Returning via St. Paul, I was able to make arrangements with Dr. S. H. Ward, secretary of the Live Stock Sanitary Board for Minnesota, and a gentleman of considerable executive experience, to take the position of chief of our new meat inspection service. While in St. Paul at this time, and on the various occasions on which I visited Chicago, I took every opportunity of familiarizing myself with the work of meat inspection as conducted in those centres. I was fortunately able to be present at the final examination of our Canadian meat inspectors in Chicago, and to address them on the subject of the duties which they would have to perform in the event of their appointment to the service of your department.

Early in May I found it necessary to return again to Calgary in order to attend the annual meeting of the Western Stock Growers Association, the question of the control of mange being one of such importance as to necessitate a personal discussion with the principal owners interested.

While there I was fortunate in being able to take up with Commissioner Perry, of the Royal North-west Mounted Police, the question of taking over from that

force the work of this branch in the Provinces of Saskatchewan and Alberta. It was decided to make the change on July 1, at which time Dr. Hilton went west and assumed charge.

Although his services in Ottawa were much missed, events have since shown that his temporary removal to Regina was in the best interests of the service, as he has succeeded in the most admirable manner in reorganizing the work. I trust that in the near future it will be possible to make other arrangements, which will permit of his being able to return to Ottawa.

During the remainder of the year a number of visits were paid to boundary points, as also to Montreal and Toronto, for the purpose of attending meetings of the various live stock associations.

In November I accompanied you to Cowansville for the purpose of discussing with a number of farmers there the question of the control of bovine tuberculosis.

Altogether the period covered by this report has been an exceedingly busy one, and the work has involved a good deal of travelling, which naturally interferes to a considerable extent with my personal control of the office work in Ottawa.

The operations of the Health of Animals Branch are now so extensive and far reaching, while those of the Live Stock Branch are also constantly extending, that the correspondence, much of which from the nature of the work carried on, is of a most exacting character, makes very serious inroads on my time, rendering it somewhat difficult to give due attention to other matters. Among the various matters dealt with during the period covered by this report, the following may be considered worthy of special mention.

New quarantine stations at Halifax, N.S., St. John, N.B., Lennoxville, Que., Gretna and Bannerman, Man., and Kingsgate, B.C., were erected and are now in full working order, while at Emerson, Man., North Portal, Wood Mountain and Willow Creek, Sask., Pendant d'Oreille, Coutts and Twin Lakes, Alta., and Midway, Osoyoos and Victoria, B.C., existing facilities have been considerably improved. A new quarantine station is at the present time being erected at Sarnia tunnel, the old premises at Point Edward being, since the building of the tunnel, inconveniently situated and altogether too large for the requirements of the service.

I regret to say that the existence of sheep scab has again been demonstrated in several districts of western Ontario. No effort was spared to secure its complete eradication, a result which was subsequently effected.

Hog cholera appears to be at last under control, a few outbreaks only having been reported, and these either attributable to old chronic cases or to fresh infection from United States sources. The district in the Counties of Essex, Kent and Lambton, so long under quarantine, was finally released from all restrictions in September, 1906, since which date, however, it has been found necessary to quarantine a few single farms on account of the sporadic outbreaks above referred to. Full statistics will be found in the special report on this disease.

Although, through the work done at the experiment station at Antigonish, it was conclusively shown that the malady locally known as Pictou Cattle Disease, is due to the ingestion of Ragwort, or Senecio Jacobœa, the experiments at that station were continued with a view to demonstrating whether or not sheep could eat the weed, green or dry, with impunity. These experiments were finally brought to a conclusion when it was shown beyond question that no bad effects follow the eating of this plant by sheep, and steps are therefore being taken to dissiminate this information freely throughout the districts infested by this weed.

The results attending the compulsory treatment for mange of the cattle in southern Alberta and southwestern Sask., conducted by the department in 1904 and 1905, were so gratifying that the stockmen in 1906 decided that a renewal of this policy was unnecessary, with the result that infected herds, drifting over immense

areas, again spread the disease broadcast. A strong effort was made during the succeeding summer to regain the advantage lost, and at the close of the season, when 380,000 cattle in the district referred to had been treated, the number of infected cattle had been greatly reduced. Unfortunately, however, the results of treatment were not as satisfactory as might have been owing to the fact that the use of oil emulsion was permitted. Although this form of treatment has been highly spoken of and recommended in different countries, it was found by our officers to be far less efficacious than the lime and sulphur dip, the use of which only was authorized in former years. As a result of this experience, the oil emulsion is no longer recognized as an official dip. All herds found to be affected after the weather became too cold for treatment have been held in quarantine, and will be dealt with in a satisfactory manner before they are released.

Glanders is, I am satisfied, being brought under control as rapidly as could be expected when we consider the insidious nature of the disease and the tremendous hold which it had obtained among the horses of several provinces, through being left for many years practically untouched.

The expenditure in compensation shows a most gratifying decrease, which ought to be more and more marked as the work of eradication progresses. A great forward step has recently been taken by prohibiting altogether the importation from the United States of unbroken horses, and insisting upon the application of the mallein test to all others imported from that country. As matters formerly stood, fresh centres of infection were constantly being introducted, a condition of affairs not likely to be modified so long as compensation was paid on this side of the line only.

Full reports of the work done in regard to glanders and its results will be found elsewhere.

It is worthy of note that the British Board of Agriculture has recently adopted a policy of slaughtering reacting horses, similar to that which this country was the first to adopt in 1904. There is every reason to believe that a number of other countries will soon be forced to adopt similar measures.

Maladie du Coit or dourine still continues to exist to a limited extent in Southern Alberta, several outbreaks having been discovered and dealt with. This disease is one which, from its nature, is exceedingly difficult to stamp out under range conditions. It is most insidious and in temperate climates will persist for a very long period in a chronic and practically unrecognizable form, only to develop suddenly in some specially susceptible individual, or under conditions peculiarly favourable. All doubt as to its identity with the dourine of Asia, Africa and France has been set at rest by the isolation at Lethbridge in February, 1907 by Drs. Watson and Gallivan, of the specific causal agent the *Trypanosoma Equiperdum*.

Experiments are still being conducted in the hope of our being able to secure some more reliable and easily applicable means of diagnosis, than is at present available. Fuller notes on this disease and the work done in connection with it will be found further on, while the reports of our pathologists are also attached.

Tuberculosis in cattle is, as heretofore, frequently reported, but as no practical and effective method of dealing with this disease, except by slaughter, has yet been discovered, no change has been made in the existing regulations. The slaughtering of large numbers of valuable cattle on the strength of the tuberculin test, which, though fairly reliable in detecting the presence of the disease, affords absolutely no indication of the extent to which it prevails in the individual, is, in my opinion, neither practical nor justifiable, involving, as it does, a most serious economic waste without, under ordinary circumstances, providing any guarantee of future safety. Further remarks on this subject are reserved for the special report on tuberculosis, which will be published I trust in my next annual report and which will include an

account of the interesting experiments by that time brought to a conclusion with the view of ascertaining the value of the open air treatment for affected herds.

Anthrax has been reported from several localities, but does not appear to be prevalent except in one or two districts which have been affected to a greater or less extent for some time past. The only effective method of combatting this disease is apparently preventive inoculation, which, together with the destruction of carcases and debris and the disinfection of premises, should enable any one unfortunate enough to occupy infected territory to safeguard his stock.

As will be seen later, this branch of your department is now in a position to supply, through the Biological Laboratory, preventive vaccines for both anthrax and black-quarter.

The laboratory continues to demonstrate its constantly growing usefulness, not only by furnishing reliable information to farmers and veterinary practitioners as to the nature of obscure or rare diseases through reports on specimens sent in, of which the number is yearly increasing, but also by the production of diagnostic agents such as mallein and tuberculin and the preventive vaccines for anthrax and black quarter. In regard to the manufacture of the two last named preparations we were exceedingly fortunate in being able to secure the services of Dr. Adrian Loir, formerly of the Pasteur Institute, in Paris. His engagement, which extended for a period of six months, was of very great value to the branch and was the means of enabling our pathological staff to prepare these prophylactic vaccines and so put us in a position to supply absolutely reliable preparations at a fraction of the cost which Canadian stock owners were formerly forced to pay to the firms engaged in their manufacture.

Our pathologists are also continually engaged in carrying on, in addition to the duties mentioned above, research work on lines likely to be useful to the department in its efforts to control and minimize the ravages of various animal plagues. The work of these gentlemen has been increased with the bringing into effect of the new Meat and Canned Foods Act, and will undoubtedly still increase to a very much greater extent. Meanwhile, their reports for the past two years will be found both interesting and instructive.

There have been several changes in the personnel and disposition of our inspection staff, the most important of which has already been mentioned, viz. the taking over on July 1, 1907, from the Royal Northwest Mounted Police, of the work of the Health of Animals Branch in Alberta and Saskatchewan, formerly carried on by that force through its commissioner, under directions from this office.

On the date mentioned, Dr. Hilton, my chief assistant, established offices at Regina and detailed his inspectors, the greater number of whom had been veterinary staff sergeants in the police and who had been granted discharges on transfer to the Department of Agriculture, to different parts of the two provinces. In addition to the former veterinary staff sergeants, Drs. Patton, McKay, Christie, Paxton, McMurtry, Gebbie, Hawke, Head, Meakings and Ovens have been added to the staff in those provinces.

In Halifax, the removal to Sydney and consequent resignation of Dr. Jakeman, led to the appointment in 1906 of Dr. H. S. McFatridge as inspector and superintendent of quarantine. A number of additional inspection stations for animals entering Canada from the United States along the New Brunswick boundary, were established in 1907, and Inspector D. McCuaig appointed and placed in charge thereof.

In Quebec Dr. Etienne and Dr. Guy having resigned, Dr. J. H. Vigneau of Three Rivers and Dr. F. X. Beauchemin, of Beauce, were appointed inspectors, the latter being stationed at St. Johns for the purpose of enforcing the quarantine regulations at that point. In order to enable us to cope in an effective manner with the outbreak of glanders in north-eastern Quebec, Dr. Henri Gauvin was selected to deal

specially with that district. Later in the same year Dr. A. Dauth of Coteau du Lac. was added to the staff and has since been actively employed. In Montreal, owing to the discontinuance of the system of marking export cattle, it has been possible to dispense with the services of four of the men formerly employed in this work, one man only being retained at each of the two yards to assist the inspector in examining shipments.

In Ontario there have been practically no changes in the staff. At Port Arthur Dr. D. B. Fraser has been appointed to deal with possible importations at that point, while at Rainy River and Fort Frances Dr. William Lawson, formerly employed for a short time in British Columbia is in charge. Dr. E. C. Oliver, previously inspector at Nelson, B.C., has been placed in Toronto to take charge of market and other inspections there, thus relieving Dr. Stork for outside duties. Dr. A. G. Hopkins, formerly veterinary inspector at Vancouver, B.C., was engaged for duty at headquarters where he performed Dr. Hilton's duties while that officer was organizing the new staff in Alberta and Saskatchewan.

In Manitoba, Dr. J. A. Stevenson, formerly of Carman, has been appointed on salary and placed in charge of the new quarantine station at Gretna. Dr. H. N. Thompson, of Melita, has been located in a similar capacity at Bannerman. Dr. J. P. Molloy, of Morden, resigned in 1906, while the recent changes in the quarantine regulations have practically abolished the positions held by the inspectors at Morden, Deloraine, Melita and Crystal City. I regret to report that Dr. Scurfield, of the last named place, who had been in the service of the department for some years, died during the winter of 1906-7.

Dr. W. H. McKenzie was appointed veterinary inspector at Emerson, and Dr. Robinson, the officer formerly stationed there, was transferred for duty at Winnipeg.

In British Columbia there have been but few changes. The outbreak of glanders in the Okanagan Valley having been brought under control, the services of Dr. George, who had been temporarily employed, were no longer required and his engagement was therefore terminated. On the removal of Dr. Oliver to Toronto, Dr. Frank was transferred to Nelson from Grand Forks, the latter post being placed in charge of Dr. Tamblyn, our officer at Midway. Dr. Knight who was early in the year employed for the purpose of dealing with outbreaks of disease in the Fraser River Valley, was entrusted with the work of boundary inspection at Myneaster and Bridesville on the new V.V. & E. Ry., while Dr. Jerymyn formerly relieving at Osooyos was employed during the summer of 1906 in dealing with a serious outbreak of glanders in the Bulkley Valley district of Northern British Columbia and subsequently stationed at Myncaster on Inspector Knight handing in his resignation. Dr. T. Bowhill has just been specially engaged for experimental work at Vancouver in connection with the disease known as Red Water. A report of the work done by this officer is published herewith.

In the Yukon Territory, Inspector A. Hawes was engaged with headquarters at Dawson, to replace Veterinary Staff-Sergeant Acres whose term of service in the Royal Northwest Mounted Police had expired.

On September 3, 1907, the Meat and Canned Foods Act went into effect and on that date inspectors of the department commenced the inspection of all meat and meat food products entering and leaving all packing houses throughout the Dominion which exported meat products to other provinces or countries. The services of Dr. S. H. Ward as chief meat inspector were obtained and a large staff of veterinarians who had passed the special examination at Chicago previously referred to, was engaged. The labour involved in getting the machinery in sufficiently satisfactory working order to have it running smoothly on the date set by the Act was by no means inconsiderable. It has, of course, been necessary in many cases to educate the parties concerned as to the necessity for certain portions of the regulations, but I

can fairly say that the act is being enforced with surprisingly good results and little friction. Full details of the work are given in another portion of this report.

HOG CHOLERA.

The progress made in the work of stamping out hog cholera has been both satisfactory and encouraging. A few restricted outbreaks have occurred in Ontario, some of which took place in the old quarantined area and were evidently traceable to chronic cases unsuspected and of long standing. In another instance a group of small outbreaks detected and dealt with in the County of Welland, were directly traceable to the feeding of swill from a large summer hotel near the frontier, the provisions used in which were largely imported from the United States. The frequency with which supposed outbreaks of hog cholera, not only in this country but in others, are credited, and with apparent reason, to sources of this kind is well worthy of note, a circumstance which appears to merit a closer investigation than it has hitherto received.

As may be noted from the accompanying summary the disease has also existed to a slight extent in British Columbia. Its presence has not, however, been detected elsewhere, which, in view of the conditions prevailing a few years ago, when widely separted centres of infection were constantly being discovered, is very satisfactory, especially when considered in conjunction with the gratifying decrease shown in the amount paid for compensation, when compared with those years. With the doubling of the period of quarantine imposed upon American swine, the present effective inspection and control of the large transit trade in these animals still carried on across western Ontario, and the prompt and thorough enforcement of the regulations relating to outbreaks among Canadian stock, the prospect for the complete eradication of this dangerous and expensive disease is rather encouraging. Our long and loosely guarded boundary line and the almost historical easy-going disregard of borderers for customs and other legal and moral obligations will, however, militate against complete immunity as long as the disease continues to prevail, as it does at present, in many different parts of the United States.

Statistics for the Twelve Months Ending March 31, 1907.

Ontario.

203 hogs, valued at $1,981.00 were destroyed in the following counties, at a cost of $1,320.61.

2 hogs valued at $12 were also slaughtered for purposes of examination, at a cost of $8, but no evidence of Hog Cholera found.

	No. of outbreaks.	Hogs destroyed.
County of Kent—		
Harwich township	2	78
Chatham "	1	1
Oxford "	2	16
County of Essex—		
Gosfield township	1	10
County of Welland—		
Bertie township	8	38
County of Lambton—		
Euphemia township	2	24
County of Huron—		
Tuckersmith township	1	36
	17	203

In British Columbia there were 6 outbreaks, 3 of which were on Vancouver Island, 2 in the New Westminister, and 1 in the Kootenay District.

125 hogs, valued at $1,309.60 were destroyed at a cost of $873.05.

In Manitoba one hog, valued at $3 was killed for purpose of examination, at a cost of $2, and was found not to have been affected with hog cholera.

In Quebec, 1 hog, valued at $15, was killed for purposes of examination, at a cost of $10, and was found not to have been affected with hog cholera.

The total number of hogs slaughtered throughout the Dominion as being affected with hog cholera, therefore, was 228, the value of which was $3,290.60 and the compensation paid, $2,193.66.

STATISTICS FOR THE TWELVE MONTHS ENDING MARCH 31, 1908.

In Ontario, 437 hogs, valued at $3,624.50 were destroyed in the following counties, at a cost of $2,416.58 in compensation:—

	Outbreaks.	Hogs destroyed.
County of Kent—		
Harwich township	7	61
Raleigh township	1	16
County of Essex—		
W. Sandwich township	5	154
Pelee Island	13	175
Maidstone township	1	19
County of Simcoe—		
Vespra Township	1	12
	28	437

In British Columbia there were 8 outbreaks, all at the Pacific coast, where 116 animals, valued at $992.89 were destroyed at a cost of $663.05 in compensation.

The total number of hogs slaughtered throughout the Dominion as being affected with hog cholera, therefore, was 553, the value of which was $4,617.39, and the compensation paid, $3,079.63.

TUBERCULOSIS.

No change has been made in the policy of the department in regard to this disease. Cattle imported into Canada for breeding purposes or milk production are tested in quarantine, except in the case of cattle from the United States which are admitted on inspection only when accompanied by a satisfactory test chart signed by an inspector of the United States Bureau of Animal Industry. Our officers test similar classes of cattle exported to the United States as also the cattle in a few herds which are placed entirely under their control and supervision. All reactors are permanently carmarked and their exportation prohibited.

The tuberculosis circular printed hereunder has been very extensively distributed and as a result, a considerably increased number of doses of tuberculin have been sent out from the biological laboratory to private practitioners, the number of animals thus tested during the years ending March 31, 1907 and 1908 being 1,527 and 1,978, respectively.

TUBERCULOSIS.

REGULATIONS RELATING TO TUBERCULOSIS.

By Order in Council dated 23rd December, 1904, in virtue of "The Animal Contagious Diseases Act, 1903."

'(1) The disease of tuberculosis is hereby exempted from the operation of Sections 5, 6, 7, and 8 of the 'Animal Contagious Diseases Act, 1903.' R. S. 1906.

'(2) Cattle which have re-acted to the tuberculin test shall be deemed to be affected with tuberculosis, and shall be permanently marked, in such manner as the Veterinary Director General may, from time to time prescribe

'(3) Cattle which have re-acted to the tuberculin test, shall not be permitted to be exported from the Dominion of Canada.'

Extract from Canadian Quarantine Regulations, in regard to Cattle from Countries other than the United States and Mexico.

'Cattle six months old or over imported from countries other than the United States and Mexico shall not be discharged from quarantine until they have been submitted to the tuberculin test by the Superintendent of the quarantine or other duly authorized officer.

'Cattle re-acting to the tuberculin test, but not showing clinical symptoms, shall be permanently marked in the right ear with the letter 'T' by the officer making the test, and may then be released at the expiry of the prescribed period of quarantine if found free from all other infectious or contagious diseases.

'Cattle showing clinical symptoms of tuberculosis shall be destroyed or otherwise disposed of as the Minister may direct.'

Extract from Canadian Quarantine Regulations, in regard to cattle from the United States.

'Cattle for breeding purposes and milk production six months old or over, if unaccompanied by a satisfactory tuberculin test chart signed by a veterinarian of the United States Bureau of Animal Industry, must be detained in quarantine for one week or such further period as may be deemed necessary and subjected to the tuberculin test; cattle re-acting thereto must be returned to the United States or slaughtered without compensation.

'Importers may be required to furnish a statutory declaration that the chart produced applies to the cattle it purports to describe and no other.'

Export of Cattle to the United States.

To enable exporters to comply with that portion of the United States Regulations printed below, the Department, will, on receiving not less than one week's notice, arrange for the testing with tuberculin, by one of its regular salaried Inspectors, of Canadian animals about to be exported to that country.

"A certificate for cattle over six months old for breeding purposes and for milch cows must also show that they have been submitted to the tuberculin test by a Canadian official veterinarian or an inspector of the Bureau of Animal Industry, and found free from tuberculosis, giving the date and place of testing, with a chart of reaction, and a description of the cattle, with age and marking

"All cattle imported for breeding, milk production, grazing, or feeding, when not accompanied by the required affidavits, must be detained in quarantine for one week, at the expense of the owner or importer, under the supervision of the inspector in charge. During this detention a rigid inspection will be made, and cattle over six months old for breeding and milk production, will be tested with tuberculin. Animals found free from disease at the end of that period will be released."

CONDITIONS UNDER WHICH TUBERCULIN IS SUPPLIED.

The department does not test any cattle for tuberculosis, except those imported and exported for breeding purposes, and such herds as are placed entirely under the control and supervision of its officers.

If any owner of cattle desires to have his animals tested, and will send in to the department the number of doses required, and the name of any reputable qualified Veterinary Surgeon whom he wishes to employ to do the work, the latter will be furnished free with sufficient tuberculin, on condition that he reports to the department the results of the test on charts which are supplied for that purpose.

The department does not order the slaughter of tuberculous animals, and consequently no compensation is or can be paid.

It must be distinctly understood that the remuneration of the Veterinarian making the test is to be paid by the owner of the animals and not by the department.

Directions for Applying the Tuberculin Test.

To obtain the normal temperature of the animal to be tested, at least four temperatures, three hours apart should be taken on the day the tuberculin is to be injected.

The requisite dose should be injected under the skin with a hypodermic syringe that has been previously sterilized. The skin at the point of the injection should be saturated with an antiseptic solution before the injection is made.

(The most convenient agents for the sterilization of the syringe and the saturation of the skin are carbolic acid or creolin in solution. The solution is made by the addition of one part of carbolic acid or of creolin to twenty parts of water.)

The hypodermic needle should be dipped in the antiseptic solution after each injection before proceeding to again fill the syringe or inject another animal.

After injection five temperatures should be taken at intervals of three hours commencing with the *tenth* hour.

In cattle which have recently undergone a previous test the re-action frequently begins much earlier, and it is then advisable to take the first temperature not more than two hours after injection, and to continue taking temperatures every third hour thereafter up to the usual time.

Veterinarians about to apply the test should carefully study the chart on which its results are to be recorded. The hours are not fixed, as under pressure of work, these may vary.

The Veterinarian must mark, in the space for that purpose, the actual hours at which temperatures are taken, so that no misunderstanding of the record may be possible.

Attention is also directed to the note in the column for decision.

The plan at one time followed of deciding as to the health or disease of an animal tested with tuberculin, viz.: by a rise of 2° in the temperature after injection, is no longer considered satisfactory. Under that system it was possible, where the normal temperature was low, to condemn an animal with a temperature under 103°. On the other hand, an animal with a high normal temperature on injection might be passed as healthy, although showing a re-action approximating 105°, which is entirely out of the normal range.

Under the system now followed animals whose temperatures after injection do not exceed 103° are to be classed as healthy unless clinical symptoms of tuberculosis are present.

Animals showing temperatures after injection of 104° or over are to be classed as tuberculous

Animals whose temperatures after injection do not reach 104°, but rise above 103°, are to be marked suspicious, unless some extenuating circumstance accounts

plainly for the rise, in which event a clinical report is to be attached to the chart as indicated in the note

Earmarking of Re-actors.

Attention is specially directed to the fact that cattle re-acting under any circumstances are permanently earmarked by one of the regular officers of the department, and may then be dealt with as the owner sees fit, subject to the approval of the local health authorities, except that their exportation will not be permitted

J. G. RUTHERFORD,
Veterinary Director General.

Health of Animals Branch,
Department of Agriculture,
Ottawa, July, 1906

Statistics for the Twelve Months Ending March 31, 1907.

435 cattle were tested for export, 39 of which re-acted, 1 was classed as suspicious, and 395 successfully withstood the test.

386 cattle were tested on being imported into Canada, 23 of which re-acted, 3 were classed as suspicious and 360 proved healthy.

1,527 cattle were tested by private practitioners with tuberculin supplied by this department, 183 of which re-acted, 25 were classed as suspicious and 1,319 proved to be healthy.

Statistics for the Twelve Months Ending March 31, 1908.

502 cattle were tested for export, 11 of which reacted, 2 were classed as suspicious, 489 thus successfully withstanding the test.

366 cattle were tested on being imported into Canada, of which 27 re-acted, two were classed as suspicious and 337 healthy.

1,978 cattle were tested throughout the Dominion by private practitioners, with tuberculin supplied by this department, 263 of which re-acted and 60 were classed as suspicious.

With regard to this general testing it must be borne in mind that in many cases the existence of tuberculosis is suspected in a herd before tuberculin is applied for, and the proportion of re-actors cannot be cited as that obtained from indiscriminate testing.

All re-actors were permanently earmarked by a veterinary inspector in cases where the owner did not voluntarily destroy them.

GLANDERS.

The statistics printed in connection with this highly dangerous and insidious malady cannot fail to give great satisfaction.

While the efforts of our inspectors have been as energetic as formerly, and the number engaged in the work considerably increased, it is very gratifying to note that in the twelve months ending March 31, 1907, nearly 250 fewer horses were slaughtered than in the similar period ending October 31, 1905, while the figures for the twelve months ending March 31, 1908, show a still further decrease of more than 550 over the 1907 figures. I am convinced that this disease is being systematically and thoroughly eradicated, but its ravages are in many cases so insidious that the work is obviously one which cannot be completed rapidly nor dealt with in a manner other than systematic.

SESSIONAL PAPER No. 15a

The testing of all American horses entering Canada, a policy which has now been inaugurated, will undoubtedly result in the prevention of fresh centres of infection being introducted into Canada, and I can confidently predict a still further large decrease in the number of horses slaughtered and the corresponding amount of compensation involved.

The number of doses of mallein issued to our inspectors during the two years ending March 31, 1907 and 1908 was 14,303 and 20,946 respectively.

STATISTICS FOR THE TWELVE MONTHS ENDING MARCH 31, 1907.

Dominion.

During the year, 1,881 horses were slaughtered, as hereunder shown:—

1881	177 killed on inspection.		Valued at $213,086.00.
	1,531 " after 1st test.		At a cost of $142,057.07.
	160 " " 2nd "		
	7 " " 3rd "		
	2 " " 4th "		
	4 " " 6th "		

954 showed clinical symptoms.

8687 horses were tested with mallein, of which 1,704 reacted and were destroyed.

Of the 1,704 re-actors, 777 showed clinical symptoms of glanders at or during the test.

There was one ceased re-actor.

Fifty-six horses are under control for re-test.

New Brunswick.

3 { 2 killed on inspection } valued at $375.00.
{ 1 killed after first test } at a cost of $249.98.

3 showed clinical symptoms.

3 horses were tested, one of which re-acted, and also showed clinical symptoms during the test.

All three horses were in Carleton county.

Nova Scotia.

Three horses were tested with mallein, but proved to be healthy.

Quebec.

227	16 killed on inspection.		Valued at $25,960.00.
	198 " after 1st test.		At a cost of $17,306.21.
	7 " 2nd "		
	2 " 4th "		
	4 " 6th "		

104 showed clinical symptoms.

992 horses were tested with mallein, of which 211 re-acted and were destroyed. Of the 211 re-actors, 88 showed clinical symptoms of glanders at or during the test. There were no ceased re-actors. No horses are being held for re-test.

Of the 227 horses slaughtered—

5	were in	Drummond and Arthabasca,
2	"	Richmond and Wolfe,
3	"	Pontiac,
11	"	Wright,
1	"	Hochelaga,
1	"	St. Johns and Iberville,
1	"	Jacques Cartier,
5	"	Charlevoix,
2	"	Argenteuil,
6	"	Laprairie and Napierville,
7	"	Yamaska,
6	"	Montreal City,
7	"	Nicolet,
1	"	Missisquoi,
3	"	Sherbrooke,
2	"	Beauce,
162	"	Chicoutimi and Saguenay,
2	"	Labelle.

Ontario.

78 { 22 killed on inspection, 53 " after 1st test, 3 " " 2nd test } Valued at $9,106.00. at a cost of $6,070.59.

63 showed clinical symptoms. 235 were tested with mallein, of which 56 reacted and were destroyed.

Of the 56 re-actors, 41 showed clinical symptoms of glanders at, or during the test.

There were no ceased re-actors nor any horses being held for re-test.

Of the 78 horses killed.

9	were in the district	of	Russell,
4	"	"	Peel,
16	"	"	Hastings,
15	"	"	Thunder Bay and Rainy River,
8	"	"	Wentworth,
2	"	"	Renfrew,
2	"	"	Lennox and Addington.
4	"	"	Durham,
3	"	"	Northumberland,
2	"	"	Ontario, S.R.
4	"	"	Dufferin,
2	"	"	Frontenac,
4	"	"	York,
2	"	"	Wellington,
1	"	"	Waterloo.

Manitoba.

336 { 23 were killed on inspection, 303 " after 1st test, 10 " " 2nd test } Valued at $40,810.00. At a cost of $27,207.37.

173 showed clinical symptoms.

1,403 horses were tested with mallein, of which 313 re-acted and were destroyed.

Of the 313 re-actors, 150 showed clinical symptoms of glanders at, or during the test.

There were no ceased re-actors.

One horse is being held for re-test.

Of the 336 horses slaughtered.

18 were in the district of Marquette.
8 " Macdonald.
54 " Selkirk.
24 " Souris.
43 " Winnipeg.
33 " Lisgar.
47 " Provencher.
73 " Dauphin.
36 " Portage la Prairie.

Saskatchewan.

928 { 89 were killed on inspection, 730 " after 1st test, 107 " " 2nd test, 2 " " 3rd test } Valued at $105,105.00. At a cost of $70,070.03.

475 showed clinical symptoms.

4,699 horses were tested with mallein, of which 839 re-acted and were destroyed.

Of the 839 re-actors, 386 showed clinical symptoms of glanders at, or during the test.

There were no ceased re-actors, 50 horses are being held for re-test.

Of the 928 horses slaughtered in Saskatchewan—

271 were in Regina and the district east thereof.
114 " Moosejaw district and west thereof.
164 " Estevan district and north thereof.
201 " Prince Albert and Battleford district.
6 " Maple Creek district.
119 " Wood Mountain "
53 " Yorkton "

Alberta.

114 { 23 were killed on inspection, 77 " after 1st test, 14 " " 2nd " } Valued at $11,390.00 At a cost of $7,593.17

63 showed clinical symptoms.

587 horses were tested with mallein, of which 91 reacted and were destroyed.

Of the 91 re-actors, 40 showed clinical symptoms of glanders at or during the test.

Of the 114 horses destroyed,

58 were in the Macleod and Lethbridge districts.
21 Calgary district
35 Edmonton "

There were no ceased re-actors.

Three horses are under control for re-test.

British Columbia.

188 { 2 killed on inspection / 162 " after 1st test } Valued at $19. 290.00
{ 19 " " 2nd " / 5 " " 3rd " } At a cost of $12.859.72

71 showed clinical symptoms.

749 horses were tested with mallein, of which 186 re-acted and were destroyed.

Of the 186 re-actors 69 showed clinical symptoms of glanders at or during the test.

Of the 188 horses slaughtered in British Columbia,

8 were at the Pacific Coast.
33 " in Eastern British Columbia.
24 " in Okanagan Valley.
123 " in Bulkley Valley district.

There was one ceased re-actor.

No horses are under control for re-test.

Yukon.

7 killed after 1st test, valued at $1,050, at a cost of $700.

2 showed clinical symptoms.

16 horses were tested, of which 7 re-acted and were destroyed, 2 of the re-actors showing clinical symptoms of glanders at or during the test. All the 7 horses killed were from the Forty-Mile district.

2 horses are under control for re-test.

There were no ceased re-actors.

GLANDERS STATISTICS FOR THE TWELVE MONTHS ENDING MARCH 31, 1908.

Dominion.

During the year 1,324 horses were slaughtered, as hereunder shown.

1324 { 84 killed on inspection / 1,127 " 1st test / 98 " 2nd " / 10 " 3rd " / 5 " 4th " } Valued at $154,304.50. At a cost of $102,868.65.

635 showed clinical symptoms.

11,428 horses were tested with mallein, of which 1,240 re-acted and were destroyed, of the 1,240 re-actors, 551 showed clinical symptoms at or during the test.

150 are being held for retest.

New Brunswick.

3 killed at first test, valued at $315, at a cost of $210.

2 showed clinical symptoms.

37 were tested with mallein, of which 3 re-acted and were destroyed.

All three horses slaughtered were in Carleton County.

Nova Scotia.

16 horses were tested all of which proved healthy.

Prince Edward Island.

3 horses were tested allof which proved healthy.

Quebec.

64 { 2 killed on inspection. } Valued at $7,770.00.
{ 62 killed at first test. } At a cost of $5,179.95.

39 showed clinical symptoms.

332 were tested with mallein, of which 62 re-acted and were destroyed.

Of the 62 re-actors 37 showed clinical symptoms of glanders at or during the test.

Of the 64 horses slaughtered in Quebec—

4	were in the district of	Richmond and Wolfe.
1	" "	Montreal.
1	" "	St. Johns and Iberville.
1	" "	Argenteuil.
8	" "	Terrebonne.
3	" "	Three Rivers and St. Maurice.
2	" "	Nicolet.
8	" "	Bellechasse.
4	" "	Yamaska.
2	" "	Joliette.
1	" "	Jacques Cartier.
1	" "	Shefford.
5	" "	L'Assomption.
2	" "	Megantic.
6	" "	Wright.
2	" "	Richelieu.
1	" "	Beauce.
1	" "	Pontiac.
2	" "	Temiscouata.
1	" "	Charlevoix.
7	" "	Quebec.
1	" "	Montmorency.

Ontario.

56 { 38 " at 1st test. / 17 killed on inspection. / 1 " 2nd test. } Valued at $5,845.00. At a cost of $3,896.61.

49 showed clinical symptoms.

476 horses were tested with mallein, of which 39 reacted and were destroyed.

Of the 39 re-actors, 32 showed clinical symptoms of glanders.

Of the 56 horses slaughtered—

2	were in the District of	Wentworth.
5	" "	Russell.
1	" "	Welland.
1	" "	Renfrew.
10	" "	Hastings, W.
1	" "	Ottawa.
1	" "	Muskoka.
2	" "	Toronto.
2	" "	York, C.
6	" "	Ontario, S.
5	" "	Thunder Bay and Rainy River.
9	" "	Lennox and Addington.
3	" "	Hastings, E.
5	" "	York, N.
3	" "	Nipissing.

Manitoba.

199 { 1 killed on inspection. / 186 " at 1st test. / 12 " " 2nd " } Valued at $25,955.00. At a cost of $17,303.11.

99 showed clinical symptoms.

3065 horses were tested with mallein, of which 198 re-acted and were destroyed.

Of the 198 re-actors, 98 showed clinical symptoms of glanders.

One horse is under control for re-test.

Of the 199 horses slaughtered—

18	were in the District of	Dauphin.
42	" "	Lisgar.
57	" "	Provencher.
27	" "	Souris.
10	" "	Brandon.
17	" "	Macdonald.
21	" "	Portage la Prairie.
1	" "	Marquette.
4	" "	Selkirk.
2	" "	Winnipeg.

Saskatchewan.

819 { 50 killed on inspection / 694 killed at 1st test. / 69 " 2nd test. / 1 " 3rd test. / 5 " 4th test. } Valued at $96,885.00. At a cost of $64,589.36.

370 showed clinical symptoms.

6263 horses were tested with mallein, of which 769 re-acted and were destroyed.

Of the 769 reactors, 320 showed clinical symptons of glanders.

94 horses are under control for re-test.

Of the 819 horses slaughtered—

147	were in the district of	Prince Albert and Saskatoon.
23	" "	Battleford.
258	" "	Regina.
42	" "	Moosejaw.
218	" "	Estevan.
57	" "	Yorkton.
1	" "	Wood Mountain.
31	" "	Maple Creek.
42	" "	Grenfell.

Alberta.

126 { 8 killed on inspection / 106 " at 1st test / 12 " at 2nd " } Valued at $11,559.50. At a cost of $7,706.30.

45 showed clinical symptoms.

1,489 horses were tested with mallein, of which 118 re-acted and were destroyed.

Of the 118 reactors 37 showed clinical symptoms.

41 horses are still under control for re-test.

Of the 126 horses slaughtered,

14 were in the district of Medicine Hat.
27 " " Macleod and Lethbridge.
40 " " Calgary.
45 " " Edmonton.

British Columbia.

12 { 5 killed on inspection / 6 " at 1st test / 1 " at 2nd " } Valued at $1,625.00. At a cost of $1,083.32.

All 12 showed clinical symptoms.
740 horses were tested with mallein, of which 7 re-acted and were destroyed.
Of the 12 horses slaughtered,

8 were at the Pacific Coast.
2 " in Eastern British Columbia.
2 " in Northern " "

Yukon.

45 { 1 killed on inspection. / 32 " at 1st test. / 3 " at 2nd " / 9 " at 3rd " } Valued at $4,350.00. At a cost of $2,900.00.

19 showed clinical symptoms.
295 horses were tested with mallein, of which 44 re-acted and were destroyed.
Of the 44 re-actors 18 showed clinical symptoms.
All the horses slaughtered were in the Dawson and Forty Mile district.

PICTOU CATTLE DISEASE.

The results of the experiments conducted at Antigonish, Nova Scotia, having, as reported last year, shown beyond question that the specific hepatic cirrhosis, locally known as Pictou Cattle Disease, is due to the continued eating of Ragwort or Senecio Jacobea, the work at this station would have been discontinued but for the wish to secure definite information as to the value of sheep and incidentally of other animals as agents in the extirpation of the weed in question.

Experimental work, with this object, has, as stated in previous reports, been for some time in progress and I am glad to be able to report that the results, are of the most gratifying nature. Sheep appear to eat the weed, both green and in a dried state, with perfect impunity. The work of eradicating the weed is thus greatly simplified, as much of the infested territory is of such a nature that the adoption of ordinary agricultural methods for weed extermination is a practical impossibility. While there is in the weedy area a great deal of excellent agricultural land, much of which has however been unfortunately allowed to run down, there is a considerable proportion of bush, also, many hills too steep and in some cases too rocky for cultivation. The weed is everywhere, in the fields, in the bush, on the hills, along the sea-shore and by the roadsides. It has secured such a foothold that ordinary methods will be powerless to eradicate it. It is apparently true that it is only injurious to cattle when fed in the dry state, as among hay or other fodder, this theory being confirmed from a practical point of view but of course weakened theoretically by the ascertained fact that these animals never, of their own accord, eat it when green if any other food is procurable. While this would seem to indicate that in order to

prevent the disease it is only necessary to effect its eradication from fields and hay meadows, it must be remembered that it is a free seeder and the seeds being light and furnished with down are carried long distances by the wind, to say nothing of other agencies. It will be seen therefore that unless the weed is eradicated or at least kept under control on the surrounding hills and road-sides, the residents of the infested area have before them an interminable task in attempting to keep their fields and hay meadows in a weed-free condition, while permitting it to grow elsewhere.

As we have succeeded in showing that sheep can eat the weed and continue to thrive, it will undoubtedly pay the farmers of the infested area to go into the sheep raising industry, more especially as there is not, to my knowledge, any district in Canada, with perhaps the exception of some part of the Eastern Townships, in which weed or no weed, richer returns from this particular branch of husbandry could reasonably be expected. The country is an ideal one for sheep raising, being capable of producing an abundance of winter feed, while the hilly pastures and other rough lands are admirably adapted to this class of stock. Wolves are unknown, and while there are yet a few bears in the deeper woods, they are not in sufficient numbers to constitute a serious menace to the flocks. The future of the sheep industry for many years to come is assured, inasmuch as the present supply is far from equal to the demand, which, in this particular district is very large and constantly increasing, the export trade to New England furnishing a regular and ready market. Wool is also rising in price, and if the proper breeds are selected there is no doubt but that this product also will return a large profit. Last, but by no means least important is the fact that if the sheep are properly handled so as to give the long cultivated and run down arable lands on each farm the benefit of their attentions from time to time, as can easily be arranged by the adoption of a simple system of rotation in which crops suitable for the purpose may be grown, the fertility of the crop worn fields will shortly be restored to the lasting advantage of their owners and of the district in general.

It must of course be admitted that while sheep are, beyond question one of the most profitable of farm products, they differ somewhat from cattle and even from swine, inasmuch as while animals of the two last-named species will, even when badly bred, poorly fed and ill-cared for, still pay for their keep and perhaps yield a small profit, the sheep require constant watchful care and many special attentions, which can only be given by men of practical knowledge and some skill.

Many farmers in Nova Scotia, as elsewhere in Canada, have hitherto paid but little attention to sheep, and this fact must be borne in mind and proper steps taken to supervise and safeguard the industry, otherwise disappointment and loss will be certain to follow, and the last state of the weedy district will be worse than the first.

The Government of Nova Scotia is, through the Provincial Department of Agriculture and the Agricultural College at Truro, carrying on a good deal of educational work with reference to the sheep industry as well as to other branches of farming, a task in which it is being assister to a considerable extent by the Live Stock Branch of your department, which from time to time furnishes skilled and practical speakers for the various meetings held throughout the province. I would however respectfully suggest that this department might with advantage go somewhat farther and undertake on its own account to furnish the farmers of the weedy area with practical object lessons in sheep raising by the establishment of a few small experimental stations somewhat similar to that at Antigonish, on which, at a small cost, flocks could be maintained under the care of an expert practical shepherd. The station at Antigonish is visited by very large numbers of farmers from the surrounding country and although no special attempt has been made to demonstrate scientific farming or feeding, the attention of those in charge having been almost entirely directed to the conduct of the experiments already described, the systematic way in which the farm has been carried

on and the results as shown by the condition in which the healthy animals have been turned off, have evoked much favourable comment and the example has had an excellent effect as is shown by the improved condition of many neighbouring farms. This fact is simply cited in support of the views which I have held ever since my first visit to the district for purposes of investigation, namely, that the Nova Scotia farmer, like many others of his class elsewhere, though perhaps owing to his long isolation to a much greater degree, is more likely to be benefited by practical ocular demonstration of fact than by the most erudite essays or eloquent addresses on farm topics. I am convinced that stations such as I have described can be carried on, if not at an actual profit, at least at very small expense, while the permanent benefits which would result from their establishment can scarcely be over-estimated, from the view point of local economics.

Immediately on the conclusion of the experiments, a full and complete bulletin on the results obtained was published and thoroughly disseminated throughout the Maritime Provinces, and as a result the population of that portion of the Dominion are now well aware of the easy and profitable method by which the pest may be overcome.

MANGE IN CATTLE.

I regret to report that this troublesome and highly contagious disease still prevails to a somewhat serious extent in Southern Alberta and South Western Saskatchewan. The compulsory dipping orders of 1904 and 1905, were, especially the latter, very generally and thoroughly enforced with most beneficial results. In fact so free from disease were the cattle of the quarantined area during the winter of 1905-6, that there was a very general feeling among the stock men interested that a repetition of the compulsory order was unnecessary, and, at the annual meeting of the Western Stock Growers' Association held at Macleod in May of 1906, a strongly worded resolution to that effect was unanimously carried. I may say that my own view of the case was somewhat different, but as circumstances rendered my attendance at the meeting impossible, and as it would have been a very difficult matter to enforce a compulsory dipping order against the wishes of and without the active co-operation of the large owners who had thus declared against it, it was decided to let one season pass without active measure further than the quarantining and treatment of all herds found to be affected. Every effort was therefore made to locate and deal with infected herds and until well on in the season, it appeared as if the results would be reasonably satisfactory. Shortly after winter set in however, the presence of the disease in a number of unsuspected and untreated herds became only too evident, and, as the weather precluded any attempt at curative measures, we had to content ourselves with endeavouring to keep under quarantine such animals as we knew to be affected or to have been exposed to infection. Under ordinary climatic conditions this policy might have been effective at least in confining the disease to the original infected herds but the winter which set in very early proved to be the most severe ever experienced since the settlement of the country, with the result that restrictive measures were utterly useless. Storms of exceptional severity were frequent and of long duration while the cold was intense and continuous. Cattle drifted for immense distances, fences were broken down or cut to prevent the storm-driven animals from piling, the diseased herds mixed freely with the others and through their huddling together for protection against the intense cold, the disease spread with extraordinary rapidity, until it was perhaps fully as prevalent, at least in some districts, as it was in 1904. Its effects combined with those of the unprecedentedly severe winter and consequent lack of feed caused heavy losses.

Psoroptic scabies among domestic cattle, where the animals of each individual owner are closely confined to his own premises either in buildings or behind proper fences, is anything but a serious malady, as the danger of its spread is reduced to a minimum, while it can always be detected in the incipient stages and effectively dealt with, yielding, as it does, to simple treatment. On the range it is a very different matter. It is not only very easily transmitted from the animals of one owner to those of another either by direct contact, or indirectly through inanimate objects which have become contaminated, but owing to the fact that, especially during the mild season, it has a well marked tendency to assume a latent form, taken in conjunction with the further fact that range animals are not kept under regular and frequent observation, it rapidly gets beyond control. The result is that herds, which during the summer may appear and in fact may actually be absolutely free from infection, having perhaps even been thoroughly treated, are not unfrequently found, on the arrival of cold weather, to be badly infected through contact on the range with the diseased stock of some other owner who possibly did not believe in treatment or was too careless or indolent to look after the health of his animals.

Under range conditiions therefore, the policy likely to prove most effective in eradicating the disease is that which we have on three separate occasions endeavoured to enforce namely, the universal and, as far as possible, simultaneous treatment of all the cattle within the affected area, whether showing signs of the disease or not. That we have not been more successful is due very largely, in my opinion, to the fact that, as above stated, a considerable proportion of the smaller owners have, instead of co-operating heartily with us in our efforts to promote and safeguard their interests, assumed a more or less antagonistic attitude.

In the spring of 1907, it was obvious that compulsory dipping was absolutely essential and it was therefore proceeded with as rapidly as possible. The area involved was divided into districts, in charge of veterinary inspectors, and again subdivided into sub-districts under the charge of experienced cowmen. Thousands of bulletins containing full descriptions of the disease and the methods of combatting it, together with the terms of the compulsory order under which the operations were conducted, were distributed throughout the country and as a result 382,921 cattle were treated. It is unfortunate that the oil emulsion, authorized for use in addition to the lime and sulphur dip, and with which over 110,000 cattle were treated, did not prove satisfactory and its discontinuance under the auspices of the department was decided on as soon as the results were observed during the following winter.

Lime and sulphur is by far the best dip obtainable and the ranchers are now limited to its use when our officers supervise the treatment of their cattle.

Statistics for the Twelve Months ending March 31, 1907.

In Saskatchewan, 332 cattle were quarantined on twenty-two premises.

In Alberta, forty bands of cattle were quarantined, involving the control of 15,699 cattle. Only 1,673 of these were, however, found to be affected.

Statistics for the Twelve Months ending March 31, 1908.

In Ontario there were two outbreaks, 91 cattle being quarantined.

In Saskatchewan there were two outbreaks, 1,760 cattle being quarantined.

In Alberta 187 bands of cattle were quarantined, involving the control of 53,518 cattle. A large number of these were quarantined on account of their owners failing to dip, in accordance with the provisions of the Compulsory Mange Dipping Order.

382,921 cattle were treated, subdivided as follows:—

265,301 dipped once, of which 259,354 were dipped twice.

110,351 treated with oil emulsion.

7,269 hand treatment.

MALADIE DU COIT.

A marked diminution in the number of animals slaughtered by reason of their being infected with this insidious malady is shown in the statistics for the two years covered by this report. In the previous seventeen months 412 horses had been destroyed, while in the past 24 months only 216 were found to be affected.

A number of animals of the doubtful class are being held in quarantine as suspects, and it can safely be said that, so far as is humanly possible, the disease is well under control. One animal was found to be diseased at Battleford, Sask., but all the other cases were discovered in Southern Alberta or in that part of Western Saskatchewan immediately adjacent thereto. The compensation involved in the last twelve months was under $3,500.

A most interesting series of experiments has been under way at the branch experiment station at Lethbridge, in charge of Inspector E. A. Watson, and that officer, assisted by Inspector M. V. Gallivan has recently been successful in isolating the Trypanosoma equiperdum, in cases drawn from the infected district, thus demonstrating that the disease as found on this continent is similar to that of European and tropical countries.

Statistics for the Twelve Months ending March 31, 1907.

167 animals valued at $15,505 were slaughtered as being affected with this disease, at a cost of $10,336.44, distributed as follows:—

Saskatchewan.

District.	Slaughtered.
Rush Lake	24
Battleford	1
	25

Value, $2,850; compensation, $1,899.90.

Alberta.

District.	Slaughtered.
Lethbridge	67
Medicine Hat	55
Calgary	20
	142

Value, $12,655; compensation, $8,436.54.

Statistics for the Twelve Months ending March 31, 1908.

District.	Slaughtered.	Suspected and Quarantined.
Lethbridge	36	33
Mayton	3	42
Medicine Hat	7	47
Calgary	3	6
Red Deer	—	3
	49	131

49 horses were slaughtered, valued at $5,175, at a cost of $3,449.92.

MANGE IN HORSES.

This disease has been prevalent to a small extent in certain districts in Quebec, while a few cases are also dealt with in the provinces further west.

It is very difficult to entirely eradicate this disease when the modern facilities for transportation and the ease with which the infection is transmitted are considered. The outbreaks are however, isolated, and being detected early, and the disease promptly dealt with, very little opportunity is afforded for it to spread.

STATISTICS FOR THE TWELVE MONTHS ENDING MARCH 31, 1907.

	Outbreaks.	Animals Affected
Quebec	55	92
Ontario	17	48
Manitoba	11	53
Saskatchewan	32	110
Alberta	10	94
British Columbia	2	4
	127	401

STATISTICS FOR THE TWELVE MONTHS ENDING MARCH 31, 1908.

	Outbreaks.	Animals Affected
Quebec	30	44
Ontario	8	54
Manitoba	21	80
Saskatchewan	26	82
Alberta	24	382
	109	642

SHEEP SCAB.

A number of cases of this disease were detected, all being confined to western Ontario. Middlesex county furnished the largest number of cases, and needless to say, prompt and effective measures were instituted with a view to eradicating the pest.

All sheep quarantined were dipped twice under the supervision of our inspectors, while frequent visits were made to infected premises before they were finally disinfected and released from quarantine restrictions.

STATISTICS FOR THE TWELVE MONTHS ENDING MARCH 31, 1907.

In Ontario 455 animals were found to be affected with sheep scab, involving the quarantine of 1,678 sheep on 56 premises, distributed as follows:

County.	Affected.	Quarantined.
Manitoulin Island	53	663
Lambton	2	15
Grey	..	17
Waterloo	12	83
Middlesex	344	519
Kent	26	26
Ontario	18	344
Lincoln	..	11
	455	1,678

STATISTICS FOR THE TWELVE MONTHS ENDING MARCH 31, 1908.

In Ontario 514 animals were found to be affected with sheep scab, involving the quarantine of 1,611 sheep on 68 premises, distributed as follows:—

County.	Affected.	Quarantined.
Lambton	154	634
Peel	2	41
South Ontario	..	5
Middlesex	321	343
Wellington	..	60
Bruce	20	37
Kent	..	10
Essex	17	481
	514	1,611

ANTHRAX.

Several outbreaks of this disease have been reported in the provinces of Ontario and Quebec, the disease having also appeared on one farm in New Brunswick.

In every case reported, an inspector has been promptly sent to make an investigation, and to take measures as effective as possible to prevent the spread of the disease. As a rule, all contact animals were inoculated with the preventive vaccine now manufactured at our laboratory, although for obvious reasons this work is not done by our own inspectors, but by veterinarians engaged by the owners themselves. The results are almost without exception of the most satisfactory nature, the spread of the disease being more immediately checked by this method than by any other. Much good, nevertheless results in other ways from the visit of the inspector. In more than one instance, human beings were found to have become infected, and to be in a dangerous condition, the disease not having been recognized by the attending physician who was unfamiliar with the disease or its symptoms.

In one instance, in which no animals were affected, but in regard to which I was notified, and sent an inspector to inquire into the circumstances, two men died of anthrax, becoming infected through unloading a car of South American hides.

In the event of an ordinary outbreak of anthrax among live stock, much depends upon prompt action in dealing with carcases and debris. These ic carelessly handled, rapidly spread the infection, one case thus being likely to give rise to many more. Our inspectors are instructed to see that all carcases of infected animals, together with excreta, bedding, &c., are thoroughly destroyed, preferably by burning, although

where this is not possible, deep burying with lime is practised. The handling of the carcases and other articles mentioned is a matter of great importance as the infection is frequently spread over a considerable area by carelessness in this regard.

All stables, fences, troughs and other articles with which the diseased animals have been in contact are thoroughly cleansed and disinfected. As a rule, where any doubt exists as to the nature of the disease, specimens of blood are forwarded to the Biological Laboratory for confirmative microscopic diagnosis. 1,801 doses of anthrax vaccine have been supplied during the past two years.

The following outbreaks were reported and dealt with in the twelve months ending March 31, 1907.

	Outbreaks.	Animals Died.
Quebec	4	26
Ontario	20	74
	24	100

The four outbreaks in Quebec were in the counties of Napierville, Three Rivers, Bagot and Berthier respectively.

In Ontario, eighteen outbreaks were in Dundas county, one in Durham and one in Renfrew county.

The following outbreaks were reported and dealt with during the year, ending March 31, 1908:

Province.	Outbreaks.	Animals Died.
New Brunswick	1	4
Quebec	5	12
Ontario	5	13
	11	29

The New Brunswick outbreak was in Queen's county.

In Quebec, three outbreaks were in St. Hyacinthe county, one in Megantic and one in Quebec.

In Ontario, three outbreaks were in Simcoe county and two in Dufferin.

BLACK QUARTER.

Black quarter has, as usual, prevailed to a certain extent in different provinces. No statistics are available in regard to it as it is not dealt with under the Animal Contagious Diseases Act.

The practice of preventive inoculation is very generally adopted, 8,054 doses of blackleg vaccine being shipped from Ottawa in addition to that sold by druggists throughout the Dominion.

RABIES.

I regret to have to report that rabies has made its appearance in a number of different districts throughout the Dominion Several outbreaks have taken place in the Niagara peninsula some of which have been directly traceable to dogs from the United States.

In Western Canada also, both in Manitoba and Saskatchewan outbreaks have occurred, in all probability due to infection derived from dogs brought in by settlers from the United States, in which country the disease prevails to a considerable extent.

All outbreaks reported were promptly dealt with, and in the western provinces, considerable districts were placed under the operation of the muzzling order provided in the regulations a copy of which is printed herewith.

DOMINION OF CANADA.

REGULATIONS RELATING TO RABIES.

By Order in Council dated 10th August, 1905, in virtue of 'The Animal Contagious Diseases Act, 1903.'

1. No dog or other animal which is affected with or has been exposed to the infection of rabies, shall be permitted to run at large, or to come in contact with other animals.

2. Any veterinary inspector may declare to be an infected place within the meaning of 'The Animal Contagious Diseases Act, 1903,' any place or premises where the infection of rabies is known or suspected to exist.

3. Veterinary inspectors are hereby authorized to order the slaughter of any dog or other animal affected with rabies, or suspected of being so affected, and to order the disposition of the carcase of such animal.

4. Veterinary inspectors are hereby authorized to order dogs or other animals which have been exposed to the infection of rabies, to be detained, isolated or muzzled.

5. No dog or other animal, nor any part therof, shall be removed out of an infected place without a license signed by an inspector.

6. Every yard, stable or outhouse, or other place or premises, and every wagon, cart, carriage, car or other vehicle, and every vessel and every utensil or other thing infected or suspected of being infected with rabies, shall be thoroughly cleansed and disinfected by and at the expense of the owner or occupier in a manner satisfactory to a veterinary inspector.

7. On receiving the report of an inspector to the effect that rabies is known or suspected to exist in any locality, the Minister of Agriculture may order that all dogs, or other animals, within such an area as he may determine or describe, shall be detained, isolated or muzzled during such period as he may see fit.

J. G. RUTHERFORD,
Veterinary Director General.

Health of Animals Branch,
Department of Agriculture,
Ottawa.

'LOCO' POISONING.

In one or two districts in the West, the peculiar disease known, rightly or wrongly, as 'Loco' poisoning, has for a number of years existed to a greater or less extent.

The matter has always been one of interest to this Branch and Drs. Hargrave and Warnock, who are perhaps more familiar with Western conditions than the majority of our officers, have devoted considerable attention to it, as will be seen from previous reports.

Owing to representations made by stock owners in the affected districts, a thorough investigation has now been undertaken, and the Special Report of Dr. Hilton is published herewith.

A series of extensive experiments is being conducted at our Lethbridge Station. This work, which has never, so far as I know, been previously undertaken on exactly similar lines, will be not only interesting but possibly very valuable, especially if the findings of Mr. Albert C. Crawford, Govt. Pharmacologist at Washington, who attributes the condition known as 'Loco' poisoning to the introduction to the animal economy of salts of barium, for which it has been shown that the 'Loco' plant (Oxytropis Lamberti) has a marked affinity, is verified by our work.

BIOLOGICAL LABORATORY.

The work performed at the Biological Laboratory under Dr. C. H. Higgins has been very satisfactory. The routine work of supplying mallein, tuberculin, blackleg vaccine, reporting on specimens received, etc., has very largely increased. Dr. Hadwen, formerly in charge of the Experiment Station at Lethbridge, was transferred in 1906 to headquarters, being replaced by Dr. A. E. Watson.

The interesting report of Dr. Higgins gives full details of the work performed and the progress made at the Laboratory.

EXPORT INSPECTIONS.

Export inspections have, as heretofore, been conducted at Montreal, Bridgeburg, Toronto, Niagara Falls, Winnipeg, St. John and Halifax, while local shipments from Canada have been inspected at other points as circumstances warranted, a considerable number of animals passing through Bayfield and Mulgrave, N.S., Charlottetown, P.E.I., and Sydney, N.S.

The excessive severity of the winter of 1906-7, resulted in a serious diminution in the number of western cattle exported the following season.

All cars conveying cattle from the range country are thoroughly cleansed and disinfected after use, while the system of double inspection, by which all western cattle are unloaded and carefully inspected at Winnipeg, and again on arrival at Montreal some days later, renders it highly improbable that affected animals can leave Canada.

Animals Inspected for Export from April 1, 1906, to March 31, 1907.

—	Horses.	Cattle.	Sheep.	Swine.	Mules.
Montreal to Great Britain	303	129,448	10,314		
Inspected at Montreal for shipment to Great Britain, via Boston and Portland		34,738	29,631		
St. John, N.B., to Great Britain	73	32,352	3,532		
Bridgeburg to Great Britain		7,877	925		
Toronto to Great Britain		8,254	1,738		
Niagara Falls to Great Britain		1,335			
Montreal to South Africa	148	30	153		200
Charlottetown to Newfoundland	29	1,395	2,312	86	
Bayfield to Newfoundland	10	130	23		
Halifax to Newfoundland	3				
Mulgrave to Newfoundland	10	703	100		
Sydney, N.S., to Newfoundland	42	254	51	19	
" St. Pierre and Miquelon		83	162	3	
Halifax, N.S., to St. Pierre and Miquelon		14	32	26	
" Bermuda	3	7			
" Jamaica		16	462		
" West Indies	1	1	3		
" Trinidad	6				
" Barbadoes	14	8	10		
Montreal to France		1,400			
" United States			443		
Lacolle to United States			9,331		
Bridgeburg to United States			83,263		
Toronto to United States			11,781		
Ontario-General to United States			26,891		
Prescott to United States			3,230		
Cornwall to United States			1,023		
Brockville to United States			855		
Total	642	218,045	180,265	134	200

EXPORT Animals Rejected at Following Ports from April 1, 1906, to March 31, 1907.

Port.	Horses.	Cattle.	Sheep.
Montreal	1	369	122
St. John, N.B.		22	1
Charlottetown, P.E.I.		1	
Total	1	392	123

Of the above, 112 cattle at Montreal and 2 at St. John were rejected for actinomycosis, and 8 cattle at Montreal for mange, 1 head of cattle at Montreal and 1 at Charlottetown were rejected on account of tuberculosis.

The one horse was rejected on account of strangles.

The rest of the animals rejected were suffering from lameness, or injuries received during transportation and showed no indication of contagious or infectious disease.

EXPORT Inspections for the Twelve Months ending March 31, 1908.

	Horses.	Cattle.	Sheep.	Swine.
Montreal to Great Britain	174	96,763	11,942	
Inspected at Montreal for shipment to Great Britain via Boston and Portland		17,543	28,939	
Montreal to South Africa			112	17
" Newfoundland		285	60	1
Halifax to Turks Island			10	
" St. Vincent			10	
" Jamaica		9	341	
" Bermuda	49	145	385	21
" Barbadoes	16			
" St. Pierre and Miquelon	1	60	66	22
" Newfoundland		5		11
" Trinidad		1	2	1
St. John, N.B., to Great Britain	39	23,129	4,167	
Sydney to Newfoundland	168	157	88	1
" St. Pierre and Miquelon	1	146	160	20
Charlottetown, P.E.I., to Newfoundland	38	1,165	1,934	177
Bridgeburg to United States			59,314	
" Great Britain, via United States		5,391		
Toronto to Great Britain		3,613		
" United States			8,356	
Bayfield and Mulgrave to Newfoundland	49	1,035	321	1
Total	535	149,447	116,207	272

ANIMALS REJECTED.

	Cattle.	Sheep.
St. John		
Montreal	240	125

Eighty-nine were rejected on account of actinomycosis, 2 suspected mange, and the balance for lameness or injury received.

IMPORTATIONS.

For the year ending March 31, 1907, the number of horses imported into Canada almost doubled any previous year, while large increases were observed in the numbers of cattle and sheep. The imposition of a thirty-day quarantine on hogs has resulted in an almost total cessation of the importation of this class of animal, with the result that the danger of hog cholera being imported other than by illegal methods, a much-dreaded possibility in view of our previous experience of this disease, is almost nil.

An interesting return is shown hereunder, which gives the number of animals refused admission to Canada during the past twelve months on account of the existence of disease. The results which would accrue from the admission of these animals may readily be realized, and the figures given are ample justification for the organization of a thorough and effective quarantine service along our southern boundary.

IMPORT Inspections from United States from April 1, 1906 to March 31, 1907.

Port.	Horses.	Mules.	Cattle.	Sheep.	Swine.	Goats.	Buffalo.
Halifax, N.S.	15						
Yarmouth	2		5			5	
St. John, N.B.	417	1	5	7	4		
Woodstock	3		1				
McAdam Junction			2				
Quebec, P.Q.	4						
St. Johns	3		3	1			
Stanstead Junction			5				
Sherbrooke			1				
Mansonville			1				
Athelstane and Dundee			2				
Cornwall, Ont.	3		4	3			
Prescott			1				
Ottawa			3				
Brockville	1	1	25				
Niagara Falls	11		16	19	8	1	
Bridgeburg	19	1	8	1,278		7	
Windsor	84		81		15		
Sarnia	74	1	45	508	1	8	2
Sault Ste. Marie			4				
Fort Frances	2		1				
Rainy River	14		13				
Emerson, Man.	3,400	133	985	24			
Winnipeg	5,447	241	4,037	57			
Gretna	288	66	56	1			
Killarney	647	40	196	2			
Morden	13		2				
Crystal City	45		77				
Mowbray	379	2	456	10			
Deloraine	385	27	314				
Melita	389		50				
North Portal, Sask.	12,433	504	8,112		13		
Wood Mountain	2,167	9	120	785			
Maple Creek	12						
Willow Creek	3,019	2	4,081	22,239			
Pendant d'Oreille, Alta.	3,627	17	185				
Medicine Hat	3						
Coutts	3,971	16	3,187	6,748			
Macleod	6						
Twin Lakes	1,331	8	736				
Stettler	15						
Gateway, B.C., and Rykerts	2,196	10	356				
Kingsgate	146	14	7				
Nelson	302	12	265	4,522	5		
Rossland	65		176	1,152	6		
Grand Forks	264	3	353	102			

IMPORT Inspections from United States from April 1, 1906 to March 31, 1907—*Con.*

Port.	Horses.	Mules.	Cattle.	Sheep.	Swine.	Goats.	Buffalo.
Midway	586	4	343	2,320	2		
Osoyoos	447		48	952			
Myncaster	34						
New Westminster	397	8	222	3,572	1	30	
Vancouver	149	1	1	29,159			
Victoria	176	79	11	19,390	1	1	
Whitehorse, Y.T	168		1,545	3,061	81		
Total	42,234	1,260	26,147	95,903	137	52	2

IMPORT Inspections from United States for year ending March 31, 1908.

Port.	Horses.	Cattle.	Sheep.	Swine.	Mules.	Goats.	Buffalo.
Halifax, N.S	4						
Sydney	2						
Yarmouth	9	1					
Charlottetown, P.E.I	4						
Woodstock, N.B	2						
McAdam Junction, N.B	2						
New Brunswick—General	6						
St. John, N.B	125	14		3	7		
Sherbrooke, Que	224	30	105	6			
Athelstane and Dundee, Que	19	13					
St. Johns, Que	252	8	14			6	
Quebec, Que				1			
Cornwall, Ont	19	1					
Prescott, Ont	58	4					
Brockville, Ont	24	20					
Toronto, Ont	5						
Niagara Falls, Ont	432	21	1		2		
Windsor, Ont	623	96	95	11	3	3	
Sarnia, Ont	205	65	556	3	1	2	
Bridgeburg, Ont	788	70	55	16	18	4	
Sault Ste. Marie, Ont	4						
Rainy River, Ont	4	6					
Fort Francis, Ont	15	1					
Ontario—General	1						
Emerson, Man	5,907	3,068	73	15	708	10	
Gretna, Man	1,424	831	17		45	4	
Bannerman, Man	403	146			12		
Manitoba—General	218	253	4		45		
North Portal, Sask	8,788	5,104	152	7	517		
Wood Mtn., Sask	437				9		
Willow Creek, Sask	265						
Saskatchewan—General	4						
Pendant d'Oreille, Alta	228	91	1,415		4		
Twin Lakes, Alta	241						
Coutts, Alta	753	126	3,404	3	12	10	410
Alberta—General	9						
Nelson, B.C	58	199				4	
Rossland, B.C	25	201					
Gateway, B.C	631	18			1	3	
Kingsgate, B.C	537	259			4		
Grand Forks, B.C	150	248	103	39	4		
Midway, B.C	48	40	1,992				
Myncaster, B.C	141	66	2,000				
Bridesville, B.C	30	215	1,315				
Chopaka, B.C	19		332				
Osoyoos, B.C	171	18	1,000		1		
New Westminster, B.C	634	111	3,733	4	10	173	
Vancouver, B.C	183	4	16,775				
Victoria, B.C	193	4	18,564	2	38		
Whitehorse, Y.T	80	582	1,689	222			
Total	24,404	11,924	53,424	332	1,441	219	410

IMPORT Inspections from countries other than the United States from April 1, 1906, to March 31, 1907.

—	Horses.	Cattle.	Sheep.	Swine.	Asses.
St. John, N.B.	544	9			
Coaticook, Que.	11				
Montreal	1,251				
Lévis Quarantine Station	50	166	1,122	52	
Niagara Falls, Ont.	39				
Sydney, N.S.	*59	*1			
Halifax, N.S.					1
Total	1,954	176	1,122	52	1

* From Newfoundland. All others from Europe.

IMPORT Inspections from countries other than the United States during the Twelve Months ending March 31, 1908.

—	Horses.	Cattle.	Sheep.	Swine.	Donkeys and Mules.
Halifax, N.S.	*1	3			
Sydney, N.S.	*52	*6			2 mules.
St. John, N.B.	174	32	187	88	
Montreal, Que.	1,058				
Quebec, Que.	101	242	2,603	75	1
Sherbrooke, Que.	4				
Niagara Falls, Ont.	42				
Bridgeburg, Ont	24				
Total	1,456	283	2,790	163	3

* From Newfoundland. All others from Europe.
One horse entered Halifax from Jamaica and one mule from Antigua.

IMPORT TESTING.

Three thousand six hundred and thirty-three horses were tested on arrival from the United States, during the twelve months ending March 31, 1908, distributed as follows:—

Halifax, N.S.	7	North Portal, Sask.	430
Yarmouth, N.S.	8	Wood Mountain, Sask.	121
St. John, N.B.	19	Willow Creek, Sask.	77
Woodstock, N.B.	2	Saskatchewan—General	4
McAdam Junction, N.B.	3	Twin Lakes, Alta.	131
New Brunswick—General.	3	Coutts, Alta.	185
Charlottetown, P.E.I.	3	Pendant d'Oreille, Alta.	34
Sherbrooke, P.Q.	105	Alberta—General.	3
St. Johns, P.Q.	15	Gateway, B.C.	203
Athelstan and Dundee, P.Q.	4	Kingsgate, B.C.	43
Prescott, Ont.	17	Nelson, B.C.	13
Brockville, Ont.	2	Rossland, B.C.	20
Toronto, Ont.	3	Grand Forks, B.C.	44
Niagara Falls, Ont.	43	Midway, B.C.	33
Bridgeburg, Ont.	80	Myncaster, B.C.	55
Windsor, Ont.	79	Bridesville, B.C.	26
Sarnia, Ont.	55	Osoyoos, B.C.	22
Sault Ste. Marie, Ont.	1	New Westminster, B.C.	30
Fort Francis, Ont.	12	Vancouver, B.C.	30
Rainy River, Ont.	4	Victoria, B.C.	85
Ontario—General.	1	Chopaka, B.C.	19
Emerson, Man.	1,154	Whitehorse, Y.T.	12
Gretna, Man.	227		
Bannerman, Man.	117		3,633
Manitoba—General.	49		

SESSIONAL PAPER No. 15a

Diseased Imports during the Twelve Months ending March 31, 1908.

Port.	No. of Horses in Infected Shipments	No. of Shipments	No. of Horses Diseased.	Country of Origin.	Action.
New Brunswick, General	1	1	1	U.S.	Returned.
Sherbrooke, Que	57	5	5	"	"
St. Johns, Que	5	2	4	"	"
Sarnia, Ont	6	3	4	"	
Rainy River, Ont	1	1	1	"	"
Emerson, Man	77	9	14	"	"
Gretna, Man	16	2	6	"	"
Bannerman, Man	5	1	1	"	"
Manitoba—General	11	2	2	"	1 destroy'd 1 returned
North Portal, Sask	7	3	4	"	Returned.
Willow Creek, Sask	30	3	3	"	"
Twin Lakes, Alta	6	4	4	"	"
Rossland, B.C	2	1	1	"	"
Midway, B.C	2	1	1	"	"
Bridesville, B.C	1	1	1	"	"
Whitehorse, Y.T	20	1	2	"	"
Total	247	40	54		

Two swine and one cow were refused admission from the United States at Emerson, being affected with hog cholera and tuberculosis respectively.

Pure Bred Imports during the year ending March 31, 1908.

HORSES AND ASSES.

Breed.	Great Britain.	United States.	Elsewhere.	Total.
Clydesdale	826	21		847
Shire	112	14		126
Shetland	229	2		231
Hackney	65	3		68
Welsh Pony	18			18
Percheron	33	107	16	156
Donkey	3			3
Thoroughbred	25	29	1	55
Belgian	7	24		31
Suffolk Punch	6	1		7
Highland	1			1
Norman	2			2
Coach	1	5		6
Standard Bred		139		139
German Coach		6		6
French Draft		1		1
Jackass		1		1
French Coach		5		5
Total	1,328	358	17	1,703

PURE Bred Imports during the year ending March 31, 1908—*Continued.*

CATTLE.

Breed.	Great Britain.	United States.	Total.
Guernseys	3	6	9
Jerseys	63	24	87
Ayrshires	120	5	125
Shorthorns	47	13	60
Galloways	11		11
Holsteins		142	142
Red Polled		151	151
Aberdeen Angus		4	4
		34	34
Total	244	379	623

SHEEP AND GOATS.

Breed.	Great Britain.	United States.	Total.
Shropshire	1,702	5	1,707
Dorset	85	1	86
Hampshire	623	6	629
Cotswold	132	1	133
Leicester	16		16
Suffolk	39		39
Oxford	108		108
Southdown	47	2	49
Lincoln	15	45	60
Ryeland	7		7
Cheviot	4		4
W. Highland	8		8
Welsh	4		4
Rambouillet		2	2
Angora Goats		23	23
Total	2,790	85	2,875

SWINE.

Breed.	Great Britain.	United States.	Total.
Berkshire	114	6	120
English Black	13		13
Tamworth	10		10
Yorkshire	13	3	16
Duroc Jersey		11	11
Poland China		12	12
Chester White		1	1
Total	150	33	183

QUARANTINE.

In the light of six years experience as the chief veterinary officer of your department and of that gained during a very much longer period as a Canadian practitioner and provincial inspector, and after very full and careful consideration of the whole question of the exclusion of animal diseases, I, in 1906, recommended to you the addition of certain further changes in the quarantine regulations. These, meeting with your approval, were accordingly in January, 1907, adopted by Order in Council and brought into force on March 1.

The most important of these amendments forbids altogether the introduction of unbroken range horses, while at the same time providing for the testing with mallein of all horses imported from the United States. A regulation of this kind is naturally somewhat irritating and difficult of enforcement, but its absolute necessity was very clearly shown by the reports of our inspectors engaged in dealing with glanders, especially in the west, these indicating that a large percentage of the outbreaks of that disease were directly due to horses imported from the United States. The danger to Canadian horses was largely increased by the fact that while some few of the state governments are trying to deal with glanders in more or less effective ways, the federal authorities have not, as yet, adopted any systematic general policy looking towards its control or eradication. These conditions, taken in conjunction with the fact that the government of Canada is paying generously for horses slaughtered as being affected, a policy followed only in one or two states and in these to a very limited extent, rendered almost imperative the taking of prompt measures to protect our own interests. The new arrangement is, I am glad to say, working in an exceedingly satisfactory manner, although it has, of course, been subjected to more or less adverse criticism by those directly affected. It has, however, imposed a large amount of additional work on this branch of the department, besides rendering necessary the erection of a number of extra buildings, both at quarantine stations already existing and at those more recently established.

It having been found necessary in 1905 to increase the period of quarantine on American swine from fifteen to thirty days, it was deemed advisable to apply the same rule to animals of this species imported from Europe. The period of detention in the case of the latter is reckoned from the clearance of the ship from her European port. In order to avoid confusion the same rule was, in the new regulations, made applicable to sheep imported from Europe. The new ruling may, in some cases, be the means of increasing, by two or three days, the period of quarantine formerly imposed on sheep, namely fifteen days from the date of landing. The period is now a definite thirty days, which is none too long to ensure safety to Canadian flockmasters.

The excellent modern and conveniently situated quarantine stations mentioned in my last report as being in course of construction at St. John, New Brunswick, and Halifax, Nova Scotia, were completed early last summer and are now in full working order.

At Lennoxville, Quebec, which owing to its prominence as a railway centre was some time ago selected as a suitable location for a quarantine station, small but convenient buildings have been erected.

At Bridgeburg, Ontario, a building will shortly be erected for the accommodation of stock to be held for inspection or quarantine. Meanwhile, a small stable has been leased for this purpose.

At Emerson, Manitoba, it has been found necessary to enlarge the accommodation for incoming live stock and work with this end in view is now in progress.

At Gretna and Bannerman, the points where the new lines of the Hill system cross the boundary between Dakota and Manitoba and at the former of which there

is also a Canadian Pacific Railway connection, new stations, have been arranged for. Meanwhile, as also at Emerson, rented stables, conveniently located, are in use.

In Saskatchewan, greatly needed further accommodation has been furnished at North Portal, Wood Mountain and Willow Creek.

Similar additions have been made to our stations in Alberta which are situated at Pendant d'Oreille, Coutts and Twin Lakes.

In British Columbia the stations at Gateway and Midway have been completed by the addition of stables to the existing corrals, while at Nelson, a building already owned by the department has been fitted up for similar use.

The completion of the Canadian Pacific line from Spokane has necessitated the establishment of an entirely new quarantine station at Kingsgate, the point where it enters Canadian territory. Owing to unavoidable difficulty in the acquisition of a site, construction work on this station was somewhat delayed but was finally brought to a successful conclusion. It is anticipated that the traffic over this line will be very heavy and that as a result, the number of animals entering at Gateway and Nelson will be greatly lessened. Temporary arrangements have been made for the protection of that portion of the boundary lying between Midway and the Similkameen valley, this territory being now traversed by the Victoria, Vancouver and Eastern Railway, forming part of the Hill system. Owing however to uncertainty as to the locations of future towns and customs ports, no buildings have, as yet, been erected, although some slight improvements have been made at Osoyoos, where, for some years, an inspector has been stationed to guard against the entry of diseased stock by trail to the Okanagan and Similkameen valleys.

The quarantine station at Victoria has been greatly improved and is now well adapted for quarantine purposes. Strenuous efforts in the direction of systematizing and rendering more effective the work of our inspectors at boundary points have been continued and I am pleased to be able to report that these gentlemen, with but few exceptions, appear to realize the importance of their positions and the responsibility resting upon them, with the result that their duties, often arduous and sometimes anything but pleasant, are now performed in a very thorough and satisfactory manner.

CAR INSPECTION AND STOCK YARDS.

Special attention is paid to the condition of cars containing hogs entering Canada in connection with the transit trade between Detroit and Buffalo. Inspectors are detailed specially, to watch this traffic with the result that it is conducted under conditions which are as satisfactory as can be expected.

Mr. J. F. Robb has been appointed as car and yard inspector and as such has travelled extensively throughout Western Canada with the result that considerable improvements have been made to the conditions existing in regard to facilities provided for the accommodation of stock.

All stock cars reaching Montreal from the range country and those reaching Winnipeg and held there, are cleansed and disinfected under the supervision of our inspectors.

All stock yards have been ordered cleaned whenever such action was deemed necessary by our inspectors, while the markets at Toronto and Montreal are visited daily by officers detailed for that purpose.

MEAT INSPECTION.

The inauguration of the Inspection Service under the provisions of the Meat and Canned Foods Act which was passed in 1907, is perhaps the most noteworthy matter dealt with in this report. This new legislation not only adds very considerably to the

work as well as to the importance of the Health of Animals Branch, but marks for the Dominion a distinct forward step in the practical application of sanitary science.

The results of the work as shown in the detailed report published herewith are such as to indicate that it was undertaken none too soon. It is regrettable that, as matters stand, it is only possible to apply the operation of the Act to those establishments which are engaged in export or interprovincial trade, and it is to be hoped that ere long municipal authorities throughout the Dominion will be roused by the conditions shown to exist and will inaugurate similar systems of dealing with food products. This can be done in most communities by the abolition of the private slaughter house with all its abominations, and the establishment of municipal abattoirs conducted under a system of inspection similar to that now enforced by this department in the export houses.

At the time of the passing of the Act there were absolutely no trained meat inspectors in Canada, and it therefore became necessary to provide without delay the nucleus of an inspection staff. This was done by arranging for a special course in meat inspection and kindred branches of knowledge at the Chicago Veterinary College, to which through the kindness of the United States authorities was added the great privilege of a course of practical work in the large packing establishments in that city. Sixty-four Canadian veterinarians were authorized to take this course, which lasted five weeks, on the understanding that if they were successful in passing the examination to be held at its close, they would receive a bonus of $100 and be eligible for appointment to the Canadian meat inspection service.

Fifty-nine of those gentlemen availed themselves of the opportunity above mentioned, and 46 succeeded in passing the examination. The course was concluded in April, but as some time was required to draft the regulations and make other preparations necessary for the inauguration of the service, it was not until September 3, 1907, that the Act was actually brought into operation. On that date 39 veterinary inspectors were distributed according to the size and importance of the plants, throughout 27 establishments engaged in the slaughter and packing of meat food products for export or interprovincial trade.

The number of inspectors being shortly found insufficient, a number of those who failed to pass the examination in Chicago were given another opportunity to qualify themselves for appointment. Several other veterinarians who were anxious to engage in the work were also subjected to examination and placed on duty as probationers, with the prospect of being advanced to the rank of inspector after acquiring sufficient practical knowledge to warrant their engagement in that capacity. The supply being found yet inadequate, it has been decided to hold in the near future an examination covering the principal points in the Dominion at which any veterinarian may present himself on the understanding that if he succeeds in passing, his name will be placed on the list of those eligible for appointment to the service.

In view of the possibility that it may be necessary from time to time to exchange inspectors between the diseases of animals and the meat inspection divisions, it has been considered advisable, with your authority, to insist that all veterinarians desiring engagement in the first mentioned division shall also pass this examination. This arrangement will render it possible to exchange inspectors between the two divisions, the passing of the examination being compulsory under the Meat and Canned Foods Act.

Since its inauguration, the work has, all things considered, progressed in a very satisfactory manner. There has been of course more or less friction here and there but this is not a matter of surprise in view of the large interests involved and the serious interference not only in the methods of work but in the premises of the packers brought about by the application of the Act and the introduction of our officers into their establishments.

The report of Dr. Ward who has been in charge of the work since its inauguration, will be found most interesting giving as it does a number of details which it is not possible to deal with here.

I cannot, however, leave this subject without expressing my very high appreciation of the excellent spirit shown by the members of the inspection staff. These gentlemen have almost without exception performed their duties, often arduous and severe, in a most satisfactory manner and have displayed so much enthusiasm and ambition as to afford the best grounds for the belief that in the near future our Meat Inspection Service will not be surpassed, even if it is equalled, by that of any other country.

Dr. Ward himself has been most energetic, and has shown a remarkable capacity for organization and attention to detail.

The work of Dr. Barnes as travelling inspector is all that could be desired. Dr. Kellam who is in charge of the Montreal staff, and Dr .Wilson who, on the promotion of Dr. Barnes, succeeded the latter in a similar capacity in Toronto have both shown themselves to be capable and energetic officers.

So far as the others are concerned, their work, generally speaking, has been so satisfactory that it would be invidious and unfair to make special mention of any. I therefore simply append a list of the establishments at present under inspection and of the officers engaged in each.

SESSIONAL PAPER No. 15a

Establishments under Inspection March 31, 1908.

Number.	Name.	Place.	Inspectors.
1	Fowlers Canadian Co	Hamilton	H. H. Ross, V.S. H. E. Marshall, V.S. J. Edgecome.
2A	Geo. Mathews Co., Ltd	Hull, P.Q.	T. H. Richards, V.S. J. Terrance.
2B	" "	Brantford	F. A. Walsh, V.S.
2C	" "	Peterborough	S. Ransom, V.S. J. H. Purdy, V.S.
25	Montreal Abattoir Co	Montreal	M. J. Kellam, V.S. J. C. Reid, V.S. A. W. Beach, V.S. C. E. Derome, V.S.
4B	Davies, Ltd	"	W. Kime, V.S. J. Briere. W. J. Morgan, V.S.
5	Laing Packing and Provision Co.	"	J. W. Symes, V.S. E. J. Lemieux, V.S. G. Brown. H. Macey.
24	Wm. Clark Co	"	C. D. Bancroft, D.V.S.
A	Wm. Davies Co., Ltd	Toronto	L. A. Willson, V.S. I. Christian, V.S. A. R. Torrie, V.S. M. W. Everett. J. R. Young.
6	Park Blackwell Co	"	C. E. Edgett, V.S. J. E. Morse, V.S. J. B. White, V.S.
7	Harris Abattoir Co	"	R. E. Murray, V.S. A. C. Walker, V.S. J. H. George, V.S.
8	D. B. Martin Co	West Toronto	F. Fisher, V.S. W. A. Hodgins.
9	Gunns, Limited	"	J. A. McLeish, V.S. S. S. Dickinson, V.S.
4C	Davies Packing Co	Harriston	C. J. Johannes, V.S.
10	F. W. Fearman Co	Hamilton	E. A. Bruce, V.S. Wm. Alexander.
11	Ingersoll Packing Co	Ingersoll	F. H. S. Lowrey, V.S. W. A. Morrin, D.V.S.
12	Canadian Packing Co.	London	T. H. Pine, V.S. Denis Brown.
13	Whyte Packing Co	Stratford	A. R. Crooks, V.S.
14	Collingwood Meat Co	Collingwood	J. R. Thompson, V.S.
15	Joseph O'Mara	Palmerston	W. A. Henderson, V.S.
16	Wm. Ryan Co	Fergus	D. S. Tennent, V.S.
17	H. Coleman	Kincardine	J. D. Irvine, V.S.
27	London Packing Co.	Paisley	D. A. Irvine, V.S.
19	Gordon, Ironside & Fares	Winnipeg	C. C. Evely, V.S. A. Hobbs, V.S.
18	J. Y. Griffin Co.	"	A. R. Walsh, V.S. W. R. Bell, V.S.
20	Gallagher, Holman Co	"	J. D. Ross, V.S. W. H. James, V.S.
21	Western Packing Co	"	J. H. Snider, V.S.
23	P. Burns Co	Calgary	W. A. McGill, V.S. C. W. S. Haworth, V.S. T. J. McClelland

Diseases found on Post-Mortem Inspection and number of Animals and portions condemned September 3, 1907, to March 31, 1908.

Disease.	CONDEMNED.									
	Cattle.			Swine.			Sheep.			Poultry.
	Carcases	Portions	Lbs.	Carcases	Portions	Lbs.	Carcases	Portions.	Lbs.	Lbs
Abscess	19	4,751		23	1,009		11	2,941		
Actinomycosis	19	548		2	303					
Adenoma								4		
Anæmia	2									
Angeoma		1								
Ascites							1			
Asphyxiation				1						
Atrophy		21								
Bruises	109	1,732	1,030	35	991	6,558	19	70		
Carcinoma	1									
Caseous lymphadenitis							2			
Cirrhosis		3			11					
Congestion		2								
Cripples	5	45	10	13	1,364	77	5	7		
Cryptorchid				4						
Cysts		15		5	29			3		
Cysticercus bovis	1									
Cysticercus cellulosæ				12	1					
Cysticercus tenuicollis								14		
Decomposition			1,207			2,999			60	240
Degeneration of liver				1						
Diamond skin disease					5					
Dirty		1	70							
Downer	2	3		2	28		8	29		
Dropsy	2									
Emaciation	83	721		37	70		89	41		
Emphysema		1								
Endotheliomata	1									
Enteritis	1			31	54		3			
Erysipelas				1						
Fatty degeneration	1	21			1					
Flukes		2			14			290		
Found dying	1						1			
Frozen				1	1					
Fungus hematodes		1								
Hæmorrhoid					1					
Hepatitis	2	12		5	19	130	1			
Hernia	1			3	34		1	2		
Hog cholera				1						
Hypertrophy		1			9					
Immaturity	1,481						1			
Imperfect bleeding	1			1			3			
Induration		8			7					
Infiltration					62					
Inflammation		2		4	3					
Influenza								1		
Jaundice	6	2		7			5	1		
Laceration					1					
Leukemia	2									
Lymphadenitis							22	321		
Mammitis					7		1			
Malnutrition				1						
Melanosis				1						
Metritis	4			4	3		1			
S. multilocularis					1					
Necrosis	2							4		
Nephritis		1		13	5					
Nodules	2	443						1,766		
Orchitis				1	1					

SESSIONAL PAPER No. 15a

Diseases found on Post-Mortem Inspection, &c.—*Continued.*

Disease.	CONDEMNED.									
	Cattle.			Swine.			Sheep.			Poultry.
	Carcases	Portions	Lbs.	Carcases	Portions	Lbs.	Carcases	Portions.	Lbs.	Lbs
Paralysis				2						
Parasites		258		7	91		1	542		
Paresis	2									
Parotitis					1					
Pericarditis traumatic	4	7		2						
Peritonitis	4			8	1					
Pigmentation					1					
Pleuritis	7	202		25	326		15	11		
Pneumonia	14	20		127	32		29	43		
Pregnancy				2						
Pyemia	50	38		87	49		17	1		
Renal calculus				1	1					
Rupture		2		1						
Sarcoma		2								
Scab								85		
Scalded alive				1						
Scorched						2,000				
Sexual smell			311	226	80		6			
Skin eruptions				2	1					
Sooty mange				7						
Sour, stale		4	26,041		8	87,755		1	3,177	
Splenitis				3						
Synovitis					2					
Swine plague					1					
Tape worm cysts							32	339		
Tuberculosis	763	1,229	480	1,670	48,519	39				
Tumour	2	6		5	25			76		
Uremia	1			10						
Various								20		
Total	2,595	10,105	29,149	2,395	53,172	99,558	274	6,612	3,237	240
Found dead	139			552			182			
	2,734	10,105	29,149	2,947	53,172	99,558	456	6,612	3,237	240

The following summary shows the result of postmortem inspection of cattle swine and sheep, from September 3, 1907, to March 31, 1908:

Cattle marked 'Canada approved'	129,065
Carcase of cattle 'condemned'	2,595
Percentage of cattle 'condemned'	1·97
Portions of cattle 'condemned'	10,104
Swine marked 'Canada approved'	859,594
Carcases of swine 'condemned'	2,395
Percentage of swine 'condemned'	·277
Portions of swine 'condemned'	53,172
Sheep marked 'Canada approved'	85,775
Carcases of sheep 'condemned'	274
Percentage of sheep 'condemned'	·313
Portions of sheep 'condemned'	6,612
Total number of carcases 'passed'	1,074,434
Total number of carcases 'condemned'	5,264
Total number of portions 'condemned'	69,888
Percentage of carcases 'condemned'	·49

During the course of re-inspection, the following meats were condemned:—

—	Cattle.	Swine.	Sheep.	Poultry.
Sour	26,041	87,755	3,177	
Decomposed	1,207	2,999	60	240
Dirty	70			
Total	27,318	90,754	3,237	240

Total amount condemned on reinspection..... 121,549 lbs

THE LIVE STOCK BRANCH.

Since the union in July, 1906, of the Live Stock Branch with the Health of Animals Branch, under my supervision as Veterinary Director General and Live Stock Commissioner, a number of new lines of work have been inaugurated and pursued.

With a view to learning the exact condition of the commercial live stock industry of the western provinces and the transportation facilities from the west to the seaboard, a special officer, Mr. J. F. Robb, has been occupied in examining the industry in its various phases. Much valuable information gathered by this officer appears in his official report, which is published herewith. This work will be continued and extended with the object of bringing about in the near future a marked improvement in existing methods.

In co-operation with a number of record associations for cattle of dairy breeds, the record of performance, which was inaugurated shortly before I assumed control, has been put into successful operation.

The education work which has been a prominent feature in the branch ever since its inception, and which comprises encouragement and assistance to winter fairs and co-operation with provincial Departments of Agriculture and other organizations in supplying expert judges of live stock and holding live stock judging schools and farmers' institute meetings, has been continued and expanded. The better distribution of pure bred males; the expansion of the National Live Stock record system; the reform of the record for French Canadian horses; the removal of the grievances of the sheep-breeders of Quebec; the holding of a National Live Stock Convention; the preparation and publication of bulletins upon various branches of the live stock industry, have all received attention.

COMMERCIAL LIVE STOCK INDUSTRY OF WESTERN CANADA.

In June, 1907, Mr. James Robb began his investigation of commercial live stock conditions in the west and the transportation of animals destined for export. After making full inquiry into the conditions affecting the meat supply of British Columbia, both in the coast cities and at interior points, he devoted considerable time to the study of live stock and meat markets in Alberta, Saskatchewan and Manitoba, and was successful in obtaining a great deal of most valuable information in regard to a number of matters which have hitherto received but little attention from any one except those directly engaged in the trade. As soon as the shipment of range cattle eastward commenced, Mr. Robb devoted his time to the close observation of

the methods of handling and transportation of this class of stock. He not only kept the whole trade under general observation, but followed individual shipments from point to point, noting carefully all circumstances having any bearing on the trade. Towards the end of the season he accompanied a trainload of cattle from Winnipeg to Montreal, paying special attention to the manner in which they were handled and the conditions at the various points where they were unloaded for feed and water. He also visited the Chicago stock yards, to which shipments of cattle were made last season for the first time in the history of our western cattle trade. His notes on the above poinnts, as also on the comparative returns obtained in the different markets, will be found most interesting reading.

In January and February, 1908, he spent some time investigating the conditions affecting the winter feeding of live stock in the west.

The work outlined above, which is fully detailed in his report, is the first step in the direction of obtaining, as far as may be possible, full and reliable information as to our commercial live stock trade. Once this is obtained, which will, I trust, be in the very near future, the department will be in a position to deal intelligently with the whole question, and to inaugurate such reforms, whether by legislation or otherwise, as will improve existing conditions.

THE RECORD OF PERFORMANCE.

The yearly testing of pure bred dairy cows in connection with the record of performance commenced in the spring of 1906. Under the arrangement agreed upon between you as minister and the several record associations for dairy breeds of cattle the testing of the animals is supervised by officers of this branch. The associations co-operating in this work agree to certain regulations, and to publish as an appendix to their several herd books the records of cows that reach the standard for registration in the record of perfomance. The regulations imposed by the branch require, among other things, that a cow to qualify for registration must be a regular breeder. That is to say, if mature she must have two calves at separate births within fifteen months of the time she freshened for the test year; and cows must again calve within fifteen months of the same freshening date. This regulation guards against abnormal records made at the expense of regular breeding, and insures the year to year excellence of all cows duly registered in the Record of Performance.

The standards of production for registration differ for the various breeds according to the decision of each respective record association. Applications for entry of animals are made by owners through the secretaries of the associations, for the several breeds. The various forms used in the work are supplied on application. The weights of milkings are recorded by the owner of the cows and reported at the end of each month, and a final, complete report, sworn to before a proper legal officer, is supplied by the owner at the end of the milking period. The weights of milk are verified by officers of the branch who visit the farms at irregular intervals and unannounced, at least eight times a year, to weigh all the milkings of two successive days, and by comparison with these verify the weights of previous milkings recorded by the owner. In addition, the inspecting officers make fat tests, by the Babcock method, of all the milk drawn during each official visit.

Up to the end of the fiscal year ending March 31, 1908, about three hundred cows have been accepted for test. Of this number, which includes Ayrshires, Holsteins and French Canadians, thirty had completed their year's test, and their records had been duly registered in the record of performance.

The records of these cows, rules governing the tests and other information bearing upon the work appear in a separate publication, which may be obtained on application to this office.

The rapid extensions of the operations of the branch in this line having rendered it impossible for Mr. Drummond, who was the first officer employed, to cover the ground, it became necessary in May, 1907, to obtain further assistance, and Mr G. W. Clemons was accordingly appointed to co-operate with him.

EXPERT JUDGES FOR FAIRS.

During the months of the year when the agricultural fairs are in progress many requests for expert judges of the several classes of live stock from the different provinces have been complied with. In doing this it is felt that a valuable service is bestowed on the live stock industry, not only in encouraging competition by securing for each exhibitor justice in the show ring but also the further reaching benefit of teaching the observing public the correct ideals to be striven for in purchasing and breeding farm animals. Judges have been supplied for winter fairs, fat stock shows, horse shows and the summer and fall agricultural fairs held in the various provinces.

For the winter fairs, in connection with which series of lectures are given, such expert judges are supplied as are able to deliver authoritative lectures upon the practical application of the scientific principles of breeding, feeding and care of live stock At these fairs block tests of many of the prize winning animals are made and as a rule the carcasses are judged and lectures delivered upon them by the men supplied by this branch.

In December, 1906, and December, 1907, expert judges and lecturers were supplied for the Maritime Winter Fair, which is held each year at Amherst, N.S., and during each of these years a grant of $1,000 was made towards the development and maintenance of the educational features of this exhibition.

Judges and lectures were supplied in 1907 for the summer and fall fairs and fat stock shows held in Manitoba, Saskatchewan, Alberta and British Columbia. In the spring of 1908 speakers and judges were supplied for the Manitoba, Saskatchewan and Alberta fat stock and horse shows, in conjunction with which were held the annual conventions of the several provincial live stock associations.

Delegations of judges were supplied in the summer and autumn of the years 1906 and 1907 for circuits of agricultural fairs held in Saskatchewan, Alberta and British Columbia. The delegations consisted of from two to three men, each member being qualified to judge two or more classes of stock. Frequently the same person judges heavy horses, beef, cattle and perhaps sheep. The judges of dairy cattle can usually judge swine, while the light horse judges selected are generally able to assist with some of the other classes. The circuits, which are arranged by the Provincial Departments of Agriculture, usually last from three to four weeks. This branch engages the judges and pays their salaries and travelling expenses until they reach the province in which they are to work, and also for the return journey, the provincial departments defraying these bills during the terms of the circuits.

In the autumn of 1906, a similar arrangement was entered into with the province of New Brunswick and in that year judges were also supplied for the Charlottetown exhibition and the fair held at Yarmouth, Nova Scotia. In 1907 the Provincial Exhibitions of New Brunswick and Prince Edward Island were similarly served.

In the province of Quebec the fairs are not arranged in circuits each association or society separately arranging its own dates. This arrangement renders it difficult to afford the assistance that might with advantage be given to the fairs in this province. During the past two years, however, judges have been supplied for a large number of exhibitions. This work was commenced in Quebec several years ago and each year the judges returning from their work report great improvement in the classification and condition of the exhibits. Many societies that formerly awarded prizes to grade sires

have come to see the error of such classification. Great improvement is noted also in the soundness of horses exhibited, it being learned that an unsoundness of hereditary character is not overlooked by competent judges even in animals of better appearance than sound prize winners.

Whenever practicable, judges supplied by the branch explain to the spectators the reasons for their decisions. This is done in the ring before the competing animals are returned to their stalls. Keen interest is taken in this branch of the work which is year by year doing much to enlighten especially the younger stockmen who have thus clearly demonstrated to them the distinguishing marks of quality in animals as seen by experts who judge for utility and breed type. These characteristics, as compared with unusual size and fatness, are being recognized in their true relationship wherever the expert judges supplied by the Live Stock Branch have an opportunity of teaching these lessons.

FARMERS' INSTITUTES, JUDGING SCHOOLS.

The several provincial Departments of Agriculture depend upon this branch to supply expert teachers for special meetings and classes devoted to animal husbandry. Most of the provinces hold separate series of Farmers' Institutes and Stock Judging Schools, the former as a rule during the summer and fall, the latter usually during winter months. In some cases the meetings are composite in character, that is live animals are used at institute meetings by the speakers to demonstrate desirable and undesirable formation.

In 1906, and again in 1907, two delegations of two men each were supplied to the province of Prince Edward Island. Each year general institute meetings were held in June and July and judging schools in November. At the former the subjects taken up related closely to the practice of mixed farming with the keeping of live stock as the chief factor. In the autumn meetings the judging, breeding and feeding of live stock were the topics taken up. In 1906, a car of high-class animals of different breeds accompanied the speakers about the country, while in 1907 the animals required were wherever possible secured from local breeders. The meetings or schools, were of from one to two days' duration and were in every case well attended.

In Nova Scotia two series of meetings were held each year and in New Brunswick one series covering the agricultural sections of the province. In the former province the meetings were held in June and July, and again in November and December. Many of the summer meetings were held in conjunction with farmers' picnics. The New Brunswick meetings were held each year in September, October and November. The topics discussed in Nova Scotia were general live stock improvement with special reference to horses, dairy cattle and sheep. In New Brunswick, horses and dairy cattle were given most attention. The delegations sent to Nova Scotia usually consisted of two men while three were each year sent to New Brunswick.

In the province of Quebec owing to the lack of a provincial farmers' institute system the institute work accomplished by this branch in that province has to be arranged for and carried out by officials of your department. The local agricultural societies and farmers clubs co-operate with the department in providing halls and advertising the meetings which are arranged in circuits. In this way a very large number of farmers are addressed each year by expert teachers at comparatively little expense.

In the winter of 1907 and again in 1908, series of meetings were held during a portion of February and March. Each year five series were held—three in French and two in English speaking districts. The delegations consisted of from two to three men. For the French delegations most of the men employed were French speaking

ex-students of the Ontario Agricultural College the others being successful stock farmers of the province. The English speaking delegations were prominent institute workers such as are sent to other provinces. The estimated attendance each year was about twelve thousand in the French counties and four thousand in the English. The subjects discussed were chiefly advanced dairy farming, hog raising, and the breeding and rearing of sound, serviceable draft horses. The speakers reported a manifestation of the keenest interest at practically all of the meetings. In Saskatchewan and Alberta, both summer and winter meetings were attended by lecturers supplied by this branch. The summer meetings, as in the eastern provinces, were general farmers' institute meetings while the winter meetings were chiefly judging schools. The Alberta winter series of 1907 was of almost three months duration. Eight points on the main lines of railway were given visits of from four days to two weeks. Two carloads of live stock of superior quality representing various classes and types were carried along for demonstration purposes. A block test was a valuable feature of each school. The live stock was contributed for the use of the schools by public spirited breeders in the province. Most of the teachers were supplied by this branch.

Practically the same service was given in British Columbia as in the other western provinces. Speakers and judging school teachers were placed at the disposal of the province at different periods of each year for series of meetings arranged by the province.

The services of Mr. C. M. McRae, who is a permanent officer of the branch, were much in demand, as judge, speaker and teacher at judging schools especially in the western provinces, and his time has therefore been largely occupied in this way.

Many outsiders were also engaged, their fitness in the special duties required being always carefully considered prior to their being employed.

DISTRIBUTION OF IMPROVED BREEDING STOCK.

The better distribution of pure-bred live stock for breeding purposes continues to receive much attention. The work is undertaken in two principal ways; first, by direct grants to provincial live stock associations to assist in holding co-operative sales of pure bred stock, and second by organized distribution of breeding animals.

In the year 1906-7, a grant of $650 was made towards a co-operative sale in each of the provinces of Manitoba, Saskatchewan, Alberta and British Columbia. In all of these provinces, except Manitoba, fat stock shows were held in conjunction with the cattle sales. Towards a similar sale held in Nova Scotia that year a grant of $200 was made. For the year ending March 31, 1908, grants for sales were given to Manitoba, Saskatchewan and Alberta, neither Nova Scotia nor British Columbia holding sales that year.

Through these sales large numbers of pure bred males were disposed of, as affording a market for the produce of pure bred herds, as well as a source of supply for ranchmen and others requiring males to improve and females to strengthen their herds. By means of the co-operative system, the quality of the offerings is safeguarded by a rigid inspection, and the expense of advertising and transportation is reduced to a minimum. It is the intention, although it is not thus specified, that the grants given shall be used to cover the expenses of advertising, transportation and selling, thus eliminating for the purchaser and breeder the item of distance which so frequently precludes business. Until recently each of the western associations has closed its sale to animals outside of the province in which it is held. In my opinion, to continue federal financial assistance towards purely provincial sales, excluding improved blood from other provinces, is inconsistent. Accordingly a

removal of provincial barriers is being insisted upon if the grant is to be continued. This the Manitoba association has complied with, and the rules in the other provinces are being similarly amended, otherwise the grant to each will in future years be withheld.

SALES OF STOCK CONDUCTED BY THE BRANCH.

Two series of sales of pure bred hogs of the breeds suitable for the production of bacon have been held in the province of Quebec. These sales were held at eight points—four in the spring and four in the fall months of 1906. The animals were selected from leading breeders in the provinces of Ontario and Quebec. In the two series upwards of 200 hogs—about 70 per cent of which were boars and about 20 per cent sows in farrow—were distributed. The districts in which the sales were held were selected by the large pork packers of Montreal, who were conversant with the character of the hogs reared in the various districts. The packers, as also the Quebec Department of Agriculture, contributed towards the expenses of the sales. In the English-speaking sections, in which half of the sales were held, most of the animals were purchased by individual farmers, while in the French-speaking districts most of the sales were made to farmers' clubs for use in the herds of their several members. As a result of these sales, the quality of the hogs now raised in these sections is much better than it was previously.

At the present time preparations are being made to select and purchase a shipment of pure bred rams to be pastured on the Experiment Station Farm at Antigonish, Nova Scotia, during the summer months and in the autumn to be sold at auction to mutton-raisers in the maritime provinces. Apart from the purpose of improving the quality of the sheep stock of these provinces, this work has also the object of assisting the development of the sheep-raising industry, which is recognized as the salvation of agriculture in the districts infested with ragwort, the weed which our experiments have now shown to be the undoubted cause of the malady locally known as Pictou cattle disease.

THE NATIONAL LIVE STOCK RECORDS.

The National Live Stock Records continue to receive much assistance from the department. This combination of pedigree registers for all breeds of live stock in Canada except Holstein Friesian cattle, which was originated by my predecessor the late live stock commissioner, is conducted as an entirely separate and independent organization, although in a manner, under the wing of the branch.

According to the agreement between yourself as minister and the several record associations, as each comes into the National Records system, the branch provides office accommodation and supplies office furnishings and stationery, and in addition, certain financial assistance to the newer and weaker associations which later under the national system are expected to become self-supporting. An annual grant of between four and five thousand dollars is also given for the purpose of defraying the expenses of the National Record Committee, the executive body of the National Record Board.

The branch also renders assistance through its officers in the organization of new record associations. During the past two fiscal years it has assisted in the organizing of record associations for Thoroughbred, French Canadian, Belgian draft and Percheron horses, the several breeds of ponies, and Red polled and Aberdeen Angus cattle. For each of these as well as the several breeds of sheep, national records have been opened.

Under the National Records system records are opened for the following classes and breeds of stock:—

Horses.—Clydesdales, Shire, Percheron, Belgian Draft, Hackney, Thoroughbred, French Canadian.

Ponies.—Shetland, Welsh, New Forest, Polo and Riding, Exmoor, Connemara Hackney.

Cattle.—Shorthorn, Hereford, Aberdeen Angus, Galloway, Guernsey, Jersey, Ayrshire, French Canadian and Red Polled.

Sheep.—Shropshire, Oxford, Leicester, Cotswold, Lincoln, Dorset, Hampshire, Southdown.

Swine.—Yorkshire, Berkshire, Tamworth, Chester White, Poland China Duroc Jersey, Essex.

Of pedigree certificates of the above breeds there were issued during the years 1906 and 1907, 25,962 and 31,909 respectively. These certificates were examined by an officer of this branch and when found to correspond with the applications and the office records were signed by him on your behalf and the seal of the department affixed to each.

REFORM OF THE RECORD FOR FRENCH CANADIAN HORSES.

Special work in connection with a portion of these records has been done. The Stud Book for French Canadian horses which was taken over from the General Breeders' Association of Quebec for nationalization was found to contain pedigrees of horses that on account of breeding and other characteristics, did not conform to the original Canadian horse. The old book was accordingly closed and a new one opened under the National system with inspected foundation stock of approved type, quality and breeding. Co-operating with the French Canadian Horse Breeders' Association, the branch carried out the inspection which was done by a commission of five men, two representing the association, two representing the branch, and a veterinary inspector of the Health of Animals Branch, who also acted as secretary.

This commission has made tours of inspection into most of the counties of the province where French Canadian horses are being reared, and is to complete the work in 1908. Inspections are made of animals recorded in the old book and such others three years old and over as are presented before the commission. The total number which have passed the inspection is about 750 head and such of these as are presented for registration, will form the basis of the National French Canadian Stud Book.

REGISTRATION OF SHEEP FROM THE PROVINCE OF QUEBEC.

The branch has also carried out an inspection of the sheep recorded in the old Quebec record, for which registration in the National Records was desired. As in the Horse Record, it was discovered that certain flocks of sheep recorded at Quebec could not without investigation be recorded in the National Sheep Record. In order to avoid hardship to Quebec breeders and to safeguard the records by reason of the transfer, a commission consisting of an experienced Ontario sheep breeder and one of our French Canadian veterinary inspectors was appointed by the branch to examine the flocks recorded in the Quebec books, in regard to the eligibility of which any doubt existed. Those which were good specimens of the breeds to which they belonged were ear-tagged and such of those tagged as conformed in breeding to the rules of entry, as laid down by the Dominion Sheep Breeders' Association, have been accepted for registration.

NATIONAL LIVE STOCK CONVENTION.

In accordance with your policy of calling together from time to time the leading men in the Dominion connected with the several branches of agriculture, the

National Live Stock Association was convened at Ottawa on February 5th, 6th and 7th, 1908.

This association is composed of provincal Ministers of Agriculture, representative officers and elected members of provincial Live Stock Associations, Record Associations and Agricultural Societies. The attendance at the convention was about one hundred and fifty, and included stockmen from every province, duly delegated to represent every provincial Live Stock Association and every incorporated Record Association in Canada.

The programme prepared included exhaustive reviews of the live stock conditions in each province, the transportation and marketing of all classes of live stock, the export trade, the import trade, customs regulations, and many other subjects that bear on the live stock industry of Canada. On a number of subjects keen discussions took place, and strong resolutions were passed, some of these as acted upon having far reaching influence on the live stock industry of Canada. One result will probably be the amendment of the regulations governing the free admission to Canada of pure bred live stock. Under the old regulations which have been in force since 1887, much stock of questionable breeding was admitted duty free. In the future free entry is likely to be granted only for such animals as are accompanied either by a Canadian certificate of registration, or, where no Canadian record exists, by an import certificate issued by the Accountant of the Canadian National Records, after he has ascertained by an examination of the foreign certificate of registration that the animal has its pedigree recorded in a reliable record in the country of origin of the breed.

A full report of the convention is published as a separate volume and may be secured on application.

PUBLICATIONS.

During the two past fiscal years, several publications have been issued. A large edition of Bulletin No. 10, 'The Production of Bacon for the British market,' issued in 1905, became exhausted early the following year and had to be re-issued. This was done in 1907 after a thorough revision and with the addition of a number of new sections and an almost entirely new set of illustrations.

Bulletin No. 11, 'The Leading Breeds of Swine,' was issued in 1907. This work gives in concise form the history, chief characteristics and standards of excellence of the six leading breeds of swine reared in Canada. Each breed is represented by distinct photogravures of typical animals

A very exhaustive treatise on sheep raising has been prepared and will shortly be issued as Bulletin No. 12, 'Sheep Husbandry in Canada.' This work covers for sheep somewhat the same ground as Bulletins Nos. 10 and 11 do for swine, with such variations as become the subject. It comprises about 150 pages replete with illustrations which will add greatly to an understanding of the reading matter.

These valuable bulletins have been compiled by Mr. J. B. Spencer, B.S.A., who combines with a thorough practical and scientific knowledge of animal husbandry, the faculty of placing his views and those of others before the public in a manner at once remarkably lucid and attractive.

I have the honour to be,
Sir,
Your obedient servant,

J. G. RUTHERFORD,
Veterinary Director General and Live Stock Commissioner.

The Honourable
The Minister of Agriculture,
Ottawa.

GEORGE HILTON, V.S.

REGINA, SASK., March 31, 1908.

SIR,—I have the honour to submit herewith my report for years ending March 31, 1907 and 1908.

During the first period my services were principally engaged in connection with the work in your head office. I, however, investigated a few reported cases of glanders in the counties of Haldimand, Frontenac and Lincoln, in Ontario, and Wright, in Quebec. This necessitated the testing of 29 horses with mallein, six of which reacted, and were dealt with in accordance with the regulations. I also applied the tuberculin test to four pure bred cattle sold for export to the United States, with negative results. It was further my duty wherever possible to visit the tuberculosis experiment station at Hull to observe and note any change in the condition and symptoms of the individual animals comprising the herd.

During the first three months of the latter period my work was confined to your office. I left Ottawa, however, for Regina on June 26, 1907, in accordance with your instructions, to take over the work of this branch in the provinces of Alberta and Saskatchewan, which had hitherto been conducted under the supervision of Commissioner Perry, of the Royal Northwest Mounted Police.

Upon my arrival there I found Dr. Higgins awaiting me, having returned to Regina from the mange area in Alberta, where he had been engaged in checking dips and solving difficulties in connection with the emulsifying of oil preparations. On July 2 he accompanied me to the police barracks, where we met the Commissioner, who, after consultation, kindly assisted us by placing at our disposal facilities for the transference of the departmental supplies to these offices. Steps were then immediately taken to place the work of the branch on lines similar to those carried out by you in the other provinces of the Dominion, with a clerical staff consisting of Miss Cresswell as stenographer, and Inspector Ayre as clerk. The latter having had considerable experience in this particular work in the office under the Commissioner, gave valuable assistance.

Dr. Burnett, chief veterinary officer of the R.N.W.M.P., who had previously given excellent service to this branch, naturally preferred to remain with the force, but arrangements with the Commissioner for the transference of the veterinary staff sergeants, resulted in all except one taking appointments as veterinary inspectors, thus making a total available force of 24 officers, in addition to three veterinary inspectors, whose duties were, and have been, limited to the local inspection of shipments of stock in the mange area. The force, although apparently adequate, has been taxed to its utmost; six of its members being stationed permanently at boundary points, have not been available for other work unless it has been in the immediate vicinity of their stations. Eleven other inspectors were restricted during the summer and fall months to mange districts, where the work in connection with the eradication of this disease occupied their undivided attention. The remaining seven had to contend with reported cases of contagious diseases, and as these were very numerous, and many originating from remote parts, considerable difficulty was experienced in attending to them as promptly as the nature of the work demanded. The force was, however, strengthened by the appointment of Dr. E. A. Meakings, who had previous experience under the police, and it was also found necessary, owing to the fact that the rush of work required Inspector Ayre's absence from Regina, to increase the office staff, and Mr. T. P. Spanner was accordingly appointed through your instructions.

In order to expedite the work and carry it on to the best possible advantage it was found necessary to assign inspectors to definite locations. This was not possible, however, until the compulsory dipping was completed; immediately this was accomplished inspectors were stationed at the most suitable points, as follows:—Inspector Ovens was

moved from Southern Alberta to Yorkton, Inspector Paxton from Claresholm to Edmonton, Inspector Gray from the northern boundary of the mange area to Saskatoon, from which point he was later transferred to the Willow Creek Boundary Station, this being necessary owing to an extended leave of absence having been given to Inspector Douglas. Inspector Olsen was removed from Wood Mountain to Saskatoon, Inspector Meakings replacing him. The headquarters of the other inspectors were not changed, their distribution appearing to be quite satisfactory. In view of the large number of inspections needing daily attention at various points along the railways in the Calgary division, also to the required inspection of a large number of premises in quarantine for cattle mange, and the placing of restrictions on others where the owners had neglected to comply with the compulsory mange dipping order, it was necessary to keep four inspectors working from this point. Directly it was possible, however, Inspector Busselle was sent to the Lethbridge quarantine station to familiarize himself with the existing conditions in Dourine patients under Dr. Watson, in order that his services might be available in investigating that disease. He was later stationed at Macleod, where the control of contagious diseases and the frequent inspections of stock for shipment, and of stock cars used in the carriage of cattle to various points in Southern Alberta necessitated the stationing of an inspector at that point. Inspectors Head, McMurtry and Gebbie, have been working from Regina, their attention being directed principally to the control of glanders along the Soo and Arcola lines, the main line east and west and the country traversed by the Kirkella branch of the Canadian Pacific Railway.

Due to dissatisfaction occurring among a number of cattle owners along the northern boundary in the mange described area in Alberta, it was found necessary to employ Dr. Hobbs, of Strathmore, and Dr. Talbot of Lacombe temporarily, for the purpose of making a special inspection of cattle in the townships lying along and south of the extreme northern boundary of the mange area. The nature of the country, together with the lack of transportation facilities, resulted in considerable time being expended in this investigation, and before satisfactory information was available it was necessary to send Inspector Riddell to assist in this work. Upon receiving a report as to the conditions found, it was possible to recommend exemption of a portion of the territory under consideration.

Although I fully appreciate the advantages to be gained by personal visits to infected centres, the inauguration of the work demanded my presence here, and therefore with the exception of my investigation, together with Dr. Warnock, of suspected loco poisoning in animals on the Porcupine Slopes, and of the outbreak of rabies in the Moosomin district, in which Dr. McGilvray co-operated with me, and also my recent visit to Ottawa, my duties have been confined to executive work in this office.

Fortunately in Saskatchewan, glanders is apparently the only disease, with which this branch deals, existing to any serious extent, and while mange in horses and cattle is not by any means absent, it is limited very largely to the southwest quarter of this province, and I have reason to believe can be practically exterminated during the coming season, if thorough measures are adopted for the treatment of infected stock, and especially so, if re-infection can be prevented from the province to the west.

The control of Glanders in this province is still a serious problem, notwithstanding the fact that all possible steps have been vigorously taken for its eradication. It is interesting to note that the most badly infected centres have been in districts lying along the railway route to the south, and I firmly believe that your action demanding the malleination of all import horses, and forbidding the introduction of unbroken equines, is the only solution of the probable extermination of glanders and makes the possibility of riding these provinces from this troublesome disease practical, so long as your policy in dealing with this malady is strictly carried out. The past and existing rapid development of the country has been the means of

introducing this disease into remote parts of this province, and while a large number of horse owners appear quite willing to co-operate with our officers in stamping out this malady, there are also unfortunately a large number who appear to be grossly ignorant of the nature of the disease, and are quite unable to realize its presence, until very serious results are vividly apparent. Several large outbreaks have been directly the result of this lack of knowledge. Cases have been reported persistently and have been so numerous that it has not yet been possible to make a systematic inspection throughout the province. It was deemed advisable to keep inspectors in districts where Glanders was found to exist, until all possible steps had been taken to ensure the testing of all contact animals, with a view of effectively stamping out the disease, and cleaning up such districts, that progress might be made.

Your instructions regarding the necessity of holding for retest all contacts with clinical cases, have proven to be quite justifiable, reactors having been found upon second test, where only non-clinicals were destroyed previously. More or less inconvenience naturally results to the owners by holding such animals until a sufficient time has expired to make a second malleination reliable, but I believe that such action is essential for a successful issue. A great deal of care, however, and good judgment, is required on the part of the inspector in charge of an outbreak, and it is therefore most important that only men are employed who possess these qualities, in addition to the others required in public work, as the possibility of non-clinical reactors infecting contacts is apparently largely influenced by existing conditions, and appears to exist in ratio to the gross unsanitary conditions, or otherwise, in which the reacting animals have been housed. While the second test reactors are not numerous, they are sufficiently so to warrant serious and careful attention, as they are often the cause of fresh outbreaks in districts where suspicion had been apparently removed.

The following figures give the total number of horses tested with mallein, as also the number destroyed in this province during the past fiscal year.

Number tested, 6,263. Number destroyed, 819.

MANGE.

Mange in cattle, as previously mentioned, does not exist to any serious extent in Saskatchewan. During the past compulsory dipping period the restricted area was divided, as in previous years, into three districts, each of which was placed in charge of a veterinary inspector, under whom a number of deputy mange inspectors were employed. The dipping in the two western districts progressed rapidly and satisfactorily, owing to the co-operation of the stock owners who appeared to be without exception quite anxious to conform with the terms of the order. The dipping in the eastern district was not accomplished as rapidly, owing to the fact that only one vat, the property of the branch, is located therein, and consequently the majority of the cattle were treated by sprayometers with oil preparations.

RABIES.

A serious outbreak of Rabies occurred in the vicinity of Moosomin, and although all possible steps were taken to obtain evidence of direct infection they were not successful. While a few years ago a number of suspicious cases were reported and investigated in the Oxbow district a positive diagnosis was not obtained, and no further reports were received in this province until the outbreak in question, which was reported during the latter part of July, when one of our inspectors was immediately detailed to investigate. Unfortunately upon his arrival the suspected cases had been disposed of, but upon information gathered the circumstances were very suggestive,

and consequently instructions were given to report any further suspicions direct to this office. Shortly afterwards a report was received, and I proceeded to Moosomin, at which point I was met by Dr. McGilvray, who had had experience with this disease in Manitoba. On our arrival we found one dog exhibiting characteristic symptoms, and after its death the brain was removed and forwarded to the Biological Laboratory and our diagnosis later confirmed. Upon looking over the ground carefully it was found advisable to recommend the issue of a Rabies muzzling order covering twelve townships, including, and adjacent to, the Village of Moosomin. For the enforcement of this order, it was further necessary to employ two men to ride the townships in question. A large number of dogs were destroyed by owners within the mentioned territory, no doubt for causes other than Rabies, the owners assuming a natural suspicion regarding any dog developing abnormal symptoms. This action was no doubt responsible for the few suspicious cases detected by the inspectors, and also largely assisted in the control of this disease in that locality.

A rather peculiar fact observed during the enforcement of the muzzling order in this vicinity, and Manitoba, was the total absence of any suspected cases outside of the respective areas although the inspectors in charge of these outbreaks were specially instructed to obtain, and look for, any such information. We were, therefore, unable to find any positive or even suspicious knowledge of suspected cases which might connect the two outbreaks.

Although five months have elapsed since the removal of the Rabies order in this province no suspected cases have been reported, and it would therefore appear that we are justified in assuming that this disease has been successfully coped with and fortunately wihout any fatality to human life.

TUBERCULOSIS.

Owing to the lack of interest so far shown by cattle owners in this province in connection with this disease it is not possible to give satisfactory information regarding the extent to which it exists.

Seventy-two (72) head of cattle comprising one consignment were tested with tuberculin, by one of our officers, having been sold for export to the United States, all of which proved to be free from the disease in question.

BLACK QUARTER.

Judging from suspected cases reported at this office, black quarter has not been very prevalent during the last fiscal period. Stock owners are, however, fully alive to the benefits resulting from preventive treatment with Blackleg vaccine, which together with the prairie fires which swept large grazing areas last fall, have no doubt played an important part in the control of this malady.

QUARANTINE STATIONS.

No alterations have been made at any of the quarantine stations in this province since my arrival at Regina, with the exception of a few necessary repairs. The station at North Portal is still in charge of Inspector Mitchell, and is the point taken advantage of by the majority of settlers and importers. Inspector Meakings is in charge of the station at Wood Mountain and Inspector Gray in charge of the one at Willow Creek.

STOCK AND STOCK CAR INSPECTIONS.

The inspection of consignments of cattle in this province is limited to points on the main line in the mange area, the majority of the shipments being made at Maple Creek and Swift Current. During the active shipping seasons it has been

necessary to station an inspector at the former point in order that no undue delay and inconvenience might result to the shipper.

The inspection of stock cars has taken up considerable time, and a great deal of difficulty was experienced during the fall months in connection with the holding and disinfection of such cars owing, in many cases, to the apparent indifference of the subordinate railway officials. They are now, however, alive to the situation, and this important feature of the work is receiving the attention it deserves.

GLANDERS (ALBERTA).

Glanders in the province of Alberta has not so far been detected to as serious an extent as within the limits of Saskatchewan. This, however, owing to totally different existing conditions, is not conclusive proof that this disease does not actually exist to a greater degree. The fact that this province until recent years has been almost entirely devoted to ranching, precluding the same possible close habitation of its animals and the further close observance by the owners, may possibly explain the dearth of reported cases. Although all such cases have been investigated as promptly as the exigencies of the service would allow, and steps taken to trace and deal effectively with all contact animals, the constant demand upon the services of officers in dealing with mange in this province has been so urgent and persistent, that it has not been possible to keep an officer in an infected district for any length of time without transferring him to some other point, for the investigation of other urgent cases.

The following figures give the number of animals tested with mallein, as also the number destroyed for glanders in this province during the past fiscal year:—

Number tested	1,489
Number destroyed	126

MALADIE DU COIT.

Dourine is without doubt the most insidious disease with which this branch has to contend, and in view of the fact that its existence paralyses the horse breeding industry it requires persistent vigilance, and the utmost caution, and good judgment, on the part of the officers, who have been specially authorized for its investigation and control. The majority of horses in the suspected districts are only available for inspection at certain periods, and while the closest scrutiny is essential it is carried out under obvious difficulties. There is no doubt, therefore, that the only safe method to pursue in the control of this disease is the placing of restrictions on all suspected animals in districts where there is the least cause to suspect that dourine may possibly exist. While such a procedure results in more or less hardship to the owners and entails a serious drain upon their revenue, the horse breeders' interests at large demand such action.

Your decision in establishing an experimental station a few years ago at Lethbridge has been of inestimable value and has resulted in valuable achievements under Dr. Watson, the pathologist in charge, whose reports from time to time have contained full and minute information in connection with the peculiarities of this malady. The officers specially authorized to deal with this disease have all been given the opportunity to take advantage of Dr. Watson's experience and study under him the various conditions found at the quarantine station at Lethbridge, with its research advantages, and are therefore pre-eminently suited for satisfactory work. A great deal of credit is due to the officers in question, as this malady has, from our present knowledge, been kept well within the suspected vicinities. While many animals have been inspected, and then shipped from close lying districts, there has only been one report of a suspected case of dourine outside of the infected area.

Range Rider Murphy's work is also worthy of special mention regarding the manner in which he has persistently ridden the range with good and effective results.

The following table gives the number of animals destroyed found affected with this disease during the past fiscal period, and although it is difficult, owing to the insidious nature of this malady, to determine positively the extent to which it exists, I have reason to believe that with one exception the limits of the infected areas have not increased.

Number destroyed, 49; number suspected and quarantined, 131.

MANGE.

Mange in horses exists to a limited but not serious extent, while in cattle it is the malady which predominates on the range, and has caused not only serious losses to owners and the cattle industry, but has been, as you are well aware, a continual source of worry, annoyance and expense to your branch. The infected area was as formerly divided into eleven districts, and as in Saskatchewan a veterinary inspector with deputy inspectors placed in charge of each. Considerable delay in commencing operations occurred in the majority of districts, due to the scarcity of sulphur, and the inspectors in charge therefore took all necessary steps to ensure that the owners of stock had made all efforts to place and procure their supplies. The intervening time was taken advantage of to visit the vats and make preparations to place all facilities into good working order, in order that no further delay might result. In only one or two districts in this province was dipping completed in the prescribed period, and the work carried on without the experience of considerable friction from the cattle owners. Unfortunately a large percentage of the ranchers appeared unwilling to co-operate with the officers, but preferred to use their influence with their neighbours to cause dissatisfaction, and apply for exemption where the conditions were not at all warrantable. For this reason, I found it only possible to recommend for your consideration, very few of the numerous applications forwarded to you through this office.

Compulsory mange dipping is without doubt a very feasible solution to the effective eradication of this disease, but in order to be successful requires the conscientious co-operation of all stock owners, without which, a successful issue cannot be made possible. Other difficulties in connection with such a measure, are caused by the tremendous range of open country, with its many coulees, and varied topographical characters, also by its climatic conditions, often accompanied by tormenting insects, with the resulting stampede of thousands of cattle into remote districts, therefore interfering with not only the roundups, but the actual enforcement of the order.

For the above reasons, although all possible measures are taken to make a clean round-up of cattle in the various districts, only too frequently this is impracticable, and has been the cause in many cases of the escape of animals after a round-up has been completed, and before treatment has been finished. It can, therefore, be easily appreciated, how essential it is, to receive the co-operation of every individual owner of cattle, in the mange area, if the best results are to be obtained and success expected.

Unfortunately it is evident that the oil preparations which were permitted and used by a number of ranchers were not effective, mange having been discovered in animals treated therewith, at various periods thereafter. It is quite probable, however, where the oil treatment proved ineffective, the fault may have been due, to, either, the quality of the oils used, or to the difficulty, or rather the impossibility, of obtaining soft water in such districts. Although Dr. Higgins after considerable trouble was able to produce emulsions, with the quality of water available, and personally instructed, and assisted, in making emulsions in these districts, and while in view of the fact that all possible steps were taken to keep reliable men supervising vats where oil was being used, it is quite probable that the urgency with which animals are treated, due to the difficulties already mentioned, was responsible for

the imperfect emulsifying of the preparations. Lime and sulphur treatment when properly prepared has given excellent results, and is without doubt the ideal treatment for mange, and any rancher therefore alive to his own interests, would refuse to use any other preparation. Its chief disadvantage, however, is the necessity for its second application, and the difficulty experienced in keeping a large number of animals under control during the interim. There is no doubt, that the enforcement of the compulsory dipping order was not only beneficial, but had a marked tendency toward checking the disease for which it was enforced. A large number of prominent ranchers are to be commended for the manner in which they assisted your officers, but unfortunately there are a greater number who cannot be too strongly condemned for their attitude, by any one interested in the cattle industry of this province. Mange in cattle exists in the restricted area to a more or less serious extent, and demands careful and energetic attention together with the co-operation of cattle owners if success is to be expected.

Your instructions regarding the appointment of range riders for the purpose of riding the infected territory are being followed and will result in valuable accumulation of existing facts. I have no doubt that the continuing of such a policy will result favourably, not only in increasing the activity of the cattle owners in adopting suitable methods for the eradication of this disease, but in convincing many of them of their closeness to infected centres.

TUBERCULOSIS.

No particular interest has been shown by the stock owners regarding this disease, very few applications having been received for tuberculin, and I am not therefore in a position to form a safe estimate as to the distribution of this malady.

ANTHRAX.

Although a few cases of Anthrax have been reported, upon investigation they have been found to be common maladies to which stock are heir, no cases of this disease having been detected in this province during the fiscal period in question.

BLACK QUARTER.

This disease does not appear to have been prevalent, very few cases having been reported. The preventive vaccine now supplied from the Laboratory of the Branch at Ottawa has been largely used in the districts formerly affected and from the facts as stated above, apparently with excellent results.

SUSPECTED LOCO WEED POISONING.

In accordance with your instructions, I proceeded during the latter part of September to the Porcupine hills in Southern Alberta, where serious losses in horses and cattle had been experienced, and investigated with Inspector Warnock, the existing conditions and reported fully thereon. As stated in the report in question, the cause of such losses appeared from our observations to be due to the ingestion of the loco weed plant, which was found flourishing in the district where the disease under investigation predominated. A number of animals were obtained and sent to Lethbridge Quarantine Station for observation and research, the results of which have been forwarded to you from time to time by Dr. Watson, who is in charge of the investigation at the station in question.

QUARANTINE STATIONS.

The quarantine stations in this province are in charge of Inspectors Patton at Coutts, Pinhorn at Pendant d'Oreille, and Christie at Twin Lakes. At the former station a new pump for the dipping vat was purchased and installed during the present year, but beyond necessary repairs no other alterations have been made at any of the stations mentioned.

INSPECTION OF STOCK AND STOCK CARS.

The inspection of shipments of stock in the restricted area to points in or out thereof, have been numerous and persistent, and although the services of three resident veterinarians appointed inspectors for this purpose only, have been taken full advantage of, at Macleod, Claresholm, High River and intermediate points, your other officers have been in continual demand.

The inspection of stock cars in this province has taken a great deal of the time of your officers, necessitating numerous visits to various points persistently. This work, together with the inspection of stock is most exacting, owing to the fact that during the shipping seasons delays are costly. I am pleased to state, however, that although considerable trouble was first experienced with the railway companies, they are now assisting your officers very materially.

I have the honour to be, sir,
Your obedient servant,

GEORGE HILTON,
Inspector.

The Veterinary Director General,
Ottawa.

C. H. HIGGINS, B.S., D.V.S., PATHOLOGIST.

March 31, 1907.

SIR,—I have the honour to transmit this my report as pathologist to the Department of Agriculture covering my work and the work of the Biological Laboratory from April 1, 1906, to March 31, 1907.

As formerly, a steady increase in the work of this laboratory is to be noted, and with this increase some new lines of work have been undertaken in the preparation of biological products as well as original research.

There have been examined 173 series of specimens during the course of the year, a somewhat smaller number than detailed in my last report which included autopsy findings in one hundred and sixteen cases of Maladie du Coït. From the nature of the specimens examined, I believe that our efforts to assist inspectors and others are more fully appreciated at this time than at any former period, and their method of preparation prior to shipment to the laboratory shows an increased understanding of the requirements with which it is necessary to conform in this respect.

A great deal of attention has been given during the year just ended to differential counts of the blood from various horses, having particular reference to the findings in cases of Dourine. The details of this work will be considered in a special report on Dourine now in preparation where it will be possible to present some very interesting and valuable data in this connection.

As the training of Dr. Watson has progressed his assistance has relieved me of many details. His transfer to the Lethbridge Quarantine Station in November last and his finding of the *Trypanosoma equiperdum* in collaboration with Dr. Gallivan has demonstrated the importance of special training for this particular work, he having been given an opportunity during his stay at this laboratory to thoroughly familiarize himself with the details of hæmatological technique and more particularly with the characteristics of the *Trypanosoma gambiense,* the parasite responsible for the disease known as sleeping sickness in Africa. Apart from the demonstration of the *Trypanosoma equiperdum* he has shown that trypanosomata occur in the blood of the 'Cotton Tail' rabbit (*Lepus sylvesticus*Q and the field mouse, animals well known throughout the Northwest of Canada.

The transfer of Dr. Watson to the quarantine station at Lethbridge provided the opportunity for us to utilize the services of Dr. Hadwen at this laboratory where his knowledge of methods and technique enables him to assume some of the responsibility in connection with the routine work of this institution. An opportunity has also been afforded him to become familiar with trypanosomata, he having found the *Trypanosoma lewisi* in a rat on January 24 last and subsequently in quite a number procured from various sources in the city and suburbs.

The employment of Dr. A. Loir for six months (July 27, 1906, to January 27, 1907) and attaching him to the laboratory has of itself increased the work of the regular staff, undertaking as we have the preparation of two products under his direction, namely, Anthrax and Black-Leg vaccines. In this connection, while Dr. Loir demonstrated his methods of procedure, we, however, were responsible for the results obtained from their subsequent manufacture, therefore, it was necessary for us to thoroughly familiarize ourselves with all of the technical details in connection therewith, as well as to originate packages and methods of application suitable to the requirements of this country.

Apart from the assistance rendered in the preparation of the above mentioned vaccines, Dr. Loir has, by his intimate knowledge of the methods in vogue at the Pasteur Institute, of France, demonstrated to us many of the details in technique peculiar to that institution and the knowledge of these details cannot fail to be of assistance for many years to come, furnishing as they have a stimulus to all our work.

Undoubtedly the greatest need of this laboratory at this time in additional assistance, for, as the work broadens greater specialization is necessary that the opinions given and the products manufactured may possess the highest possible merit.

Without further preliminary remarks I will proceed to enumerate under a few headings some of the features connected with the work of this laboratory which are of more than passing interest.

TUBERCULIN.

The amount of tuberculin disbursed from the laboratory by your order shows but a slight increase over the amounts sent out in previous years and totals 3,430 doses. For the purpose of comparison the following table indicates the total amounts disbursed during this and preceeding years.

1903-04	1904-05	1905-06	1906-07
		Five months only	
2,649	3,145	1,967	3,430

A detailed month statement of the amount sent out during the past year is as follows:—

April	267
May	349
June	160
July	184
August	161
September	254
October	118
November	423
December	336
January	589
February	437
March	152
Total	3,430

The printed circular which accompanies each shipment of this product is as follows:—

Dominion of Canada—Department of Agriculture—Health of Animals Branch—Biological Laboratory—Tuberculin, its Preparation and how to use it.

Preparation of Tuberculin.

Tuberculin is the glycerinized extract of cultures of tubercle bacilli. During its preparation it is sterilized and contains no living germs, and therefore cannot communicate disease to a healthy animal.

Action of Tuberculin.

The injection of an appropriate dose of tuberculin under the skin of a tuberculous animal is followed by a specific febrile reaction which is characteristic.

Animals that are non-tuberculous suffer no inconvenience and present no reaction.

In advanced cases, where the disease has permeated the whole system, the reaction may be very slight or altogether absent.

How to Apply the Tuberculin Test.

To obtain the normal temperature of the animal to be tested, at least four temperatures, three hours apart, should be taken on the day the tuberculin is to be injected.

The requisite dose should be injected under the skin with a hypodermic syringe that has been previously sterilized. The skin at the point of the injection should be saturated with an antiseptic solution before the injection is made.

(The most convenient agents for the sterilization of the syringe and the saturation of the skin are, carbolic acid or creolin in solution. The solution is made by the addition of one part of carbolic acid or of creolin to twenty parts of water.)

The hypodermic needle should be dipped in the antiseptic solution after each injection before proceeding to again fill the syringe or inject another animal.

After injection, five temperatures should be taken at intervals of three hours, commencing with the tenth hour.

In cattle which have recently undergone a previous test the reaction begins much earlier, and it is then advisable to take the first temperature not more than two hours after injection and to continue taking temperatures every third hour thereafter up to the usual time.

The tuberculin as sent out is diluted ready for use. Each bottle is stamped with the amount of dilute tuberculin it contains.

Sixty minims is sufficient for a full-grown animal; thirty to forty minims for a younger animal, in proportion to age.

The date on each bottle indicates the limit of the time during which the contents should be considered reliable for diagnostic purposes.

GLANDERS.

The greater part of the work on the subject of glanders has been in connection with the preparation of mallein. Some new work, which is incomplete at this writing, has been undertaken with this affection.

MALLEIN.

Sufficient mallein has been forwarded from this laboratory at your request to test 14,303 head of horses, an amount which far exceeds that forwarded during any similar period This entire amount was prepared at this laboratory. With the new facilities which are already installed there will be much less difficulty experienced in the preparation of this product than has formerly been the case. In preceding years mallein has been forward in the following amounts:—

1903-4	3,153
1904-5	7,819
*1905-6	6,453
1906-7	14,303

A monthly statement of the disbursements during the past year is as follows:—

April	1,370
May	702
June	1,400
July	1,645
August	1,730
September	1,786
October	1,245
November	598
December	225
January	712
February	830
March	2,060
Total	14,303

The printed circular of instructions accompanying each shipment of mallein is as follows:—

Dominion of Canada—Department of Agriculture—Health of Animals Branch—Biological Laboratory.—Mallein, its Preparation and How to Use it.—Preparation of Mallein.

Mallein is the glycerinized extract of cultures of the bacillus mallein. During its preparation it is sterilized and contains no living germs, and, therefore, it cannot communicate disease to a healthy animal.

Action of Mallein.

The injection of an appropriate dose of mallein under the skin of an animal affected with glanders or farcy, is followed by a double reaction, either form of which

* Five months only.

may be diagnostic, viz.:—A rise in temperature or a painful oedematous swelling at the point of inoculation, gradually increasing in size for a period of twenty-four hours or longer. Either form of reaction is usually accompanied by more or less debility.

Animals that are not affected with glanders or farcy suffer no inconvenience and present no reaction.

In advanced cases where the disease has permeated the whole system, the reaction may be very slight or altogether absent. It must be borne in mind that, in cases where there is abnormally high temperature and necessity prevents delay in applying the test, a lowering of the temperature should be considered as suspicious, and the animal held under observation for a re-test under normal conditions.

How to Apply the Mallein Test.

To obtain the normal temperature of the animal to be tested, at least two temperatures, three hours apart, should be taken on the day the mallein is to be injected.

The requisite dose should be injected under the skin with a hypodermic syringe that has been previously sterilized. The most convenient point of injection is the side of the neck, the local reaction being more prominent in this region. The skin at the point of injection should be saturated with an antiseptic solution before the injection is made.

(The most convenient agents for the sterilization of the syringe and the saturation of the skin are, carbolic acid or creolin in solution. The solution is made by the addition of one part of carbolic acid or of creolin to twenty parts of water.)

The hypodermic needle should be dipped in the antiseptic solution after each injection before proceeding to again fill the syringe or inject another animal.

After injection five temperatures should be taken at intervals of three hours commencing with the eighth hour.

The mallein solution as sent out is ready for use. Each bottle contains one dose of mallein solution, two an one-half cubic centimeters, or about forty minims.

The date on each bottle indicates the limit of time during which the contents should be considered reliable for diagnostic purposes.

ANTHRAX.

Anthrax has been positively diagnosed on several occasions during the past year and some of the material from suspected outbreaks has been in such a condition on its receipt at the laboratory that a positive diagnosis could not be made, therefore, it is necessary that greater care should be exercised in forwarding material for laboratory diagnosis as we can render but little assistance when the material is in an advanced state of decomposition due to improper preparation prior to forwarding.

The following was sent out from your office in September last to obviate the difficulties referred to above and while an improvement has since been noted there is still room for the exercise of greater care in this direction.

ANTHRAX (CHARBON)—BLACK-LEG (CHARBON SYMPTOMATIQUE).

In suspected cases of Anthrax (Charbon) the diagnosis can be positively confirmed by microscopic examination. A few drops of blood, placed on a clean piece of note paper, if allowed to thoroughly dry in the air before folding, will furnish sufficient material for diagnostic purposes.

In suspected cases of Black-leg (Charbon Symptomatique), the bloody serum from an affected portion of the animal, prepared in the manner above indicated for Anthrax will furnish material for a positive diagnosis.

Where it is impossible to exclude either of the diseases above mentioned and it is probable that death is due to one or the other, the placing of a small amount of

blood in an equal amount of pure glycerine will enable a positive laboratory diagnosis. (A drachm of this blood-glycerine preparation is all that is required.)

Anthrax bacilli are always abundant in the blood of animals dying from this disease. The bacilli of Black-leg are found in small numbers only, but are sufficiently numerous to infect experimental animals.

Glycerine prevents the growth of putrefactive bacteria, but does not affect the spores of either Anthrax or Black-leg.

Full information concerning history, clinical symptoms, &c., should be given.

Specimens should be addressed: Biological Laboratory, Ottawa, Ont.

Ottawa, Sept. 1, 1906.

ANTHRAX VACCINE.

We are now preparing the vaccines for the immunization of animals against anthrax, and are supplying it in sealed tubes similar to the method employed by its originator, M. Pasteur. That the work of inoculation may be facilitated, it is advisable when ordering this vaccine to indicate the number of farms or places where the vaccine is to be used that a sufficient number of tubes may be furnished, rendering a fresh one available at each farm or place. This, of course, refers to the use of the vaccine in small outbreaks where the infected territory is comparatively large and the number of animals quartered thereon is correspondingly small. This vaccine is supplied at 5 cents per dose and full instructions for its use accompany each package.

A detailed statement of the amounts sent from the laboratory during the past year is as follows:—

April	.....
May	.....
June	.....
July	10
August	380
September	710
October	200
November	.....
December	.....
January	.....
February	.....
March	18*
Total	1,318

BLACK-LEG.

It will be noted that reference is made to this disease in the circular mentioned under the subject of Anthrax to which the reader is referred for information concerning the forwarding of material for diagnosis.

BLACK-LEG VACCINE.

The preparation of black-leg vaccine has also been undertaken at this laboratory during the past year and we are now prepared to supply this product. This vaccine which is an attenuated virus is supplied on silk threads each of which constitutes a full dose and these threads are held in a brass clip of our own special design. The

* The amount was prepared at the laboratory. All other figures in this table refer to the product of the Pasteur Vaccine Company of Chicago, their vaccine having been used prior to our undertaking the preparation of this product.

brass clips are so arranged that they can be attached to the cork of the vial in which they are to be forwarded from the laboratory. By this simple means we are enabled to inclose in one of these small vials as high as fifty doses of vaccine. The threads in the slip are held with sufficient pressure to prevent their being accidentally pulled out with other threads, or dropping out when handling. Further, this method of disbursing provides an aseptic package of small size which will be found very convenient to large users of this material.

Black-leg vaccine is supplied at 5 cents per dose. Outfits for applying the same are also provided and can be obtained at 50 cents each. These outfits consist of a needle holder, two needles and a pair of forceps.

COITAL EXANTHEMA.

During the month of June two outbreaks of this affection were investigated by me, one in the vicinity of Simcoe, and the other at Campbellford, Ontario. In each instance the diagnosis was easily made. The investigation of the Simcoe outbreak afforded an opportunity for obtaining blood smears which gave the following differential counts:

HORSES EXAMINED JUNE 26 AND 27, 1908.

—	III. Clyde Stallion, 5 years old. Abrasions on sheath.	IV. B.D. Mare, 1,400 lbs.; slight vaginal discharge. Served June 14 and 15.	V. S.A. Mare Topsy. Served May 10. First symptoms May 23.	VI. S.A. Mare Kate. Served June 14. First symptoms six days after. Scars. Pigment re-appearing.
Total number cells counted	1,358	1,706	1,051	1,018
Polymorpho-nuclear neutrophiles	62·2	60·4	60·3	60·0
Eosiniphiles	3·2	2·1	8·0	1·6
Mast cells	0·1	0·2	0·7	0·0
Lymphocytes, including large and small mononuclear cells	34·3	37·2	30·8	40·0

From these few counts it will be noted that there is no marked alteration from the normal in any of the cases cited.

MALADIE DU COIT.

In September last, accompanied by Dr. A. Loir, I proceeded to the Lethbridge quarantine station, where, in collaboration with Dr. Hadwen some special experimental work on Dourine was undertaken. Later, Dr. Loir and myself accompanied Dr. J. C. Hargrave of Medicine Hat, Alberta, to a ranch near Gleichen, in the anticipation that the cases to be seen, some of which were of recent origin, would furnish suitable material for the demonstration of the Trypanosoma equiperdum. None of us however, found any body in the fresh and stained preparations of blood and other fluids examined from well marked cases of Maladie du Coit that resembled in the slightest degree the parasite for which we were searching. I was able, however, to obtain many smears from horses known to be free from Maladie du Coit or Dourine, as well as from animals affected in various stages of that disease, with which to continue the investigations connected with the differential counts of the leucocytes of the blood and the significance of their variations from the normal in this affection. In March, I again visited the Lethbridge quarantine station for the pur-

pose of verifying the finding by Drs. Watson and Gallivan of the Trypanosoma equiperdum and was able to detect the parasite in preparations taken by me from the vagina of the 'Tiffin' mare on the 21st, 23rd and 25th of that month. Up to February 11, 1907, the date of the first finding of the Trypanosoma equiperdum by Drs. Watson and Gallivan, this parasite has not been observed by any individual working with this disease in Canada, nor had it been observed in material taken from naturally infected cases on the North American continent.

TRYPANOSOMATA.

During the past year it has been found that some of the animals of this country harbour in their blood trypanosomata. These are, so far as we have been able to determine, non-pathogenic, with the exception of the parasite demonstrated to be the cause of the Dourine in horses.

RABBIT TRYPANOSOMATA.

Organisms were first observed in the blood of a wild rabbit ('cotton-tail'), which was about to be used for experimental purposes by Dr. Watson at the Lethbridge quarantine station. Fortunately, however, the blood was examined previous to inoculation with material from a case of Dourine, and was found to contain trypanosomata. Dr. Watson has since found the organisms to be present in a large percentage of the rabbits examined by him. On December 28 last we received two rabbits at this laboratory, one of which was found by Dr. Watson to harbour trypanosomata in its blood; the other, however, did not show any parasites up to the time of leaving Lethbridge, but, on their arrival here the blood of both contained organisms. The rabbit referred to in whose blood trypanosomata were found by Dr. Watson at Lethbridge, came to an untimely end from an accidental cause, but the other has, whenever examined, presented a greater or less number of organisms and is otherwise in perfect health. Inoculations have been made into mice, guinea-pigs and rabbits with blood containing active trypanosomata, but in no instance has a subsequent examination of the blood of the inoculated animal revealed any organisms, and we have, therefore, concluded that the parasite is non-pathogenic and similar to the Trypanosoma lewisi, in that it cannot be transferred from its normal host.

Blood from the rabbit which we have at this laboratory, containing active trypanosomata, has been subjected by Dr. Hadwen to freezing in pipettes for eighteen hours (+20° F.) without any apparent harm to the organisms, they being very active when thawed out at the end of this period, but clumping was in progress.

Many fleas from the rabbit in question have been examined in fresh and stained preparations, and trypanosomata have been demonstrated in several instances to be in an evolutionary stage. Fleas removed from the rabbit and kept for twenty-four hours before crushing did not show anything simulating trypanosomata.

From the data which we have, it is evident that infection can take place from rabbit to rabbit through the medium of the flea, and in all probability is the result of direct inoculation.

MOUSE TRYPANOSOMATA.

Trypanosomata have also been found by Dr. Watson in the field mice, which are abundant at the Lethbridge quarantine station. This organism is different in its general and micro-chemical characteristics from the organism found in rabbits No attempt has been made to transfer this parasite to other species.

TRYPANOSOMA LEWISI.

These organisms were found by Dr. Hadwen in a rat obtained near this laboratory on January 24, 1907. Since this finding organisms have been demonstrated in the blood from six of the sixteen rats examined. These sixteen rats were obtained from three different localities several miles apart. We have not found any particular locality from which the rats have been obtained to be entirely free from non-infected rodents. Fleas from some of these infected rats have been crushed and trypanosomata have been observed in the debris. This organism has been under cultivation on blood agar.

TRYPANOSOMA GAMBIENSE.

While this organism is not native to Canada we have conducted a large number of experiments with it for the purpose of familiarizing ourselves with a pathogenic trypanosoma.

The organism was received from Dr. Adami, pathologist to McGill University, in August last, and is one of the original strains brought from Africa by Dutton and Todd. All of our work with this organism has been with guinea-pigs and the object has been to learn the characteristics of a pathogenic trypanosoma. During this study we have found certain facts which we have not seen recorded in the literature on this organism.

These trypanosomata have been kept alive for eleven days at room temperature, the blood containing them having been drawn into a pipette and the end left unsealed but the organisms lost their virulence by this exposure. Blood containing these trypanosomata has been subjected to a temperature of +8°F to 0°F for two hours and three quarters, the organism becoming active with the warming of the slide. Material taken from a guinea-pig forty-eight hours after death was infective and at sixty-two hours transitional forms were seen but the parasite was no longer pathogenic for guinea-pigs. These trypanosomata disappear very rapidly after the natural or artificial death of its host provided the body is not opened.

This parasite is a strict ærobe and some experimental work has been undertaken in the use of serum to treat infected, and to immunize susceptible animals. The serum used was obtained from sealed pipettes which contain no organisms a few hours after closing. This study, while very interesting has not progressed sufficiently for us to make any statement in this connection.

RABIES.

Owing to the reported existence of rabies in certain localities it was deemed advisable to issue the following circular on the subject which would enable the receipt at the laboratory of material suitable for the purpose of verifying diagnoses.

RABIES (HYDROPHOBIA).

'An animal suspected of being affected with rabies (hydrophobia), should, if possible, be captured alive, placed in a cage where it can do no harm and watched. If affected with rabies, symptoms will appear within forty-eight hours and death will occur within a few days. No affected animal recovers.

That other causes of death may be excluded, material should be forwarded to the laboratory for a confirmatory diagnosis. If the time necessary for transmission to the laboratory does not exceed twenty-four hours, the head may be severed from the body and forwarded by express packed in ice. In winter, the severed head, if frozen, may be sent any distance provided instructions are given to keep frozen.

Where the distance from the laboratory exceeds twenty-four hours a portion of the nervous system, (brain or spinal cord), the medulla or base of the brain is pre-

ferred, may be placed in pure glycerine and forwarded by mail. There should be an excess of glycerine over the bulk of material forwarded.

Full information concerning history, clinical symptoms, &c., should be given.

Specimens should be addressed,

Biological Laboratory,
Ottawa, Canada.'

POULTRY DISEASES.

The past year has shown that there is still much to be gained from a study of the causes of death among the domestic fowls. From the findings at many autopsies, it is evident that there is an error in the diet of the birds which have come under our notice. My views may possibly appear to be somewhat radical in this connection but they have been informed from the observation of the lesions seen in fowls sent to this laboratory with a request for assistance in the prevention of further losses among the flocks from which they originate. The main lesions consist of an erosion of the mucous membrane of the gizzard, an atrophy of its muscular structure and an accompanying muco-enteritis. In such cases a complete change of diet to the whole grains and the placing of muriatic acid (a teaspoonful to the quart) in the drinking water has, in every instance from which subsequent information has been received, wholly corrected the difficulty, and there have been no further losses in the same flock.

In many instances the birds have been supposed to be suffering from chicken cholera, but the autopsy findings have in no instance revealed this condition during the past five years, nor have I any knowledge of an outbreak of this affection in Canada, with the exception of an outbreak studied by me in 1895-6, and therefore it is evident that this serious affection is not as common as usually supposed.

ENTERO-HEPATITIS IN TURKEYS.

Some experimental work was undertaken in this connection during last fall, but the nocturnal disappearance of the experimental birds nullified investigations covering a period of six weeks. From the data obtained, however, it is evident that the infection is transmitted either through the egg or upon its surface, and that the buying of new stock in the egg will not wholly prevent losses from this disastrous disease. Other observers report that the treatment of the eggs with a weak solution of alcohol has, in some instances, prevented the appearance of the affection in the young stock hatched therefrom.

PHOTOGRAPHY.

Photography is an essential feature in conducting the routine and scientific investigations of this laboratory, for, by its application an accurate record may be made of any particular feature which comes under our notice, and such photographic records, apart from their value in the publication of a descriptive article on the work conducted, assist in a positive determination when comparing specimens from different sources. Apart from the above-mentioned assistance, the photographic work of this laboratory during the past few years has included the preparation of the majority of the photographs used as illustrations in the annual reports of this branch. In this connection, it is particularly gratifying to note that some of these photographs have been considered of sufficient scientific value to warrant their reproduction in other publications.

SESSIONAL PAPER No. 15a

ADDITIONAL FACILITIES PROVIDED.

Certain additional rooms deemed necessary that the various preparations manufactured at this laboratory may be thoroughly separated from one another are very nearly completed and will greatly facilitate our work. These rooms have been partitioned off in the basement—providing a large incubating chamber of special design, inoculation and preparation rooms for use in connection with the manufacture of mallein and tuberculin and a room for the preparation of virulent black-leg material for use in the manufacture of black-leg vaccine. In the attic, rooms have been provided for the anthrax and black-leg vaccines, thus, all of the products are effectually separated the one from the other and the general routine work of the institution.

ISOLATION STABLE.

The need of an isolation stable is still more urgent than at any previous period in the history of this laboratory. Such a stable would be invaluable in connection with the preparation and testing of the anthrax and black-leg vaccines as well as affording facilities for experimental observation of cases of virulent infectious disease in the larger domestic animals.

In closing this my report I desire to express my appreciation for the assistance and timely advice which you have so freely given.

I have the honour to be, sir,
Your obedient servant,

CHAS. H. HIGGINS, *B.S., D.V.S.*
Pathologist.

The Veterinary Director General,
Ottawa, Canada.

W. H. PETHICK, D.V.S.

GOVERNMENT EXPERIMENT STATION, ANTIGONISH, N.S.
March 31, 1907.

SIR,—I have the honour to submit a brief report of the experiments conducted at this station, together with other work in which I have been engaged during the year ending March 31, 1907.

Since the publication of your report dealing fully with Pictou Cattle Disease and in which you conclusively show that ragwort is the cause of that malady, we are often asked for advice as to the best means of ridding the farms of this weed, which, as you know, is slowly, but none the less surely, claiming new territory.

It has long been known that sheep are free eaters of weeds and the experiments, which I have the honour of conducting, under your direction, at the present time, are chiefly with a view of learning what dependence can safely be placed in these animals in clearing land of this weed. It was, therefore, necessary to learn the effect of continued ragwort eating upon sheep.

It is generally believed that these animals will tolerate a considerable quantity of the plant without ill effects. Notwithstanding all this, the comparison of our own observations with those of others, help to confirm the suspicion (well known to you) that sheep die annually on certain farms from the effect of ragwort eating. The exact condition of plant or animal which lead to these fatal results has not yet been explained, although many theories have been advanced.

It is thought by some that ragwort is injurious at any season or stage of growth. Others consider it harmless when green, but poisonous when dried. According to the third theory, the seeds of the plant are alone injurious. The weight of evidence is very much in favour of the view that the plant is only poisonous when frozen, or at least, after the hard frosts set in. The opinion is strengthened by the fact that the deaths usually occur late in the fall. This again gives rise to the question: Does freezing cause any chemical change in the juices or texture of the plant to render it hurtful, or is the loss accounted for by the fact that the sheep are compelled, owing to the scarcity of the usual fodder plants, which are wilted by the frost or covered with snow, to exist almost entirely upon the more hardy ragwort?

Some people claim that fat, adult sheep are only susceptible. Others again state that feeding upon the plant rarely produces death, but causes staining of the tissues, making the mutton unmarketable.

I do not think that you would wish me, at this stage of our work, to furnish a report of each experiment. Nearly all are yet in progress, and I know that you (very rightly) consider it unwise to anticipate results. You are thoroughly familiar with every detail. But I would just say, for the information of such as may read this report, that the opinions or theories outlined above are at present being investigated by various experiments, systematically conducted, at this station, under your direction.

The outlook is decidedly hopeful, and I trust that before the new year we may be able to speak with confidence, and from the knowledge gained you may be in a better position to advise effectual means of eradicating the plant, which is the source of so much worry and loss. Already we seem to have fairly well disproved certain theories, which, had they been true, would certainly have hindered the sheep industry within the weed area.

I am glad to be able to inform you that many of our farmers are increasing the number and strength of their flocks by keeping over a good many ewe lambs. I believe that there are, at least, 5 per cent more sheep wintering in this county this year than last.

Farmers are beginning to see that if weeds are to be successfully fought, sheep should be kept. I certainly concur in this opinion, and from the present outlook, might say that the better cultivation of the tillable portion of the farms, the free use of the hoe and scythe in the headlands, fence corners and roadsides assisted by the keeping of plenty sheep on pasture and waste lands are the best means towards stamping out this weed, that we could perhaps suggest at present.

While we are sparing neither time or trouble, both here and at the biological laboratory, in endeavouring to learn the cause for the loss of sheep upon certain farms, presumably due to the eating of ragwort after the plant has been frozen, and until more definite knowledge is obtained, I would suggest that sheep be removed from ragwort land before the fall frosts set in or the snow covers up the usual fodder plants. It certainly can do no good, but only harm, to keep sheep out at pasture as late in the fall as is the custom on many farms. They should at least (after the grass is wilted) be penned at night and fed hay in the morning before being turned free. This may prevent them from eating injurious plants.

Our goats continue in good health, but are not giving a very good account of themselves as ragwort eaters. In this particular, they do not compare with sheep, and, contrary to our expectations, the common variety are more destructive to the plant than are the Angoras, which very much prefer to feed upon browse.

The experiment in which cattle are employed, is still in progress. The three cows which have been fed, during two winters, upon native hay, from which the ragwort was carefully removed, are, apparently, in perfect health, while one of the three cattle fed upon the same kind and quality of hay, but containing ragwort, died of Pictou cattle disease in June last.

While this experiment has, perhaps, not yet been extended over a sufficient period to justify us in making a public announcement, as to the safety of feeding cattle upon hay, from which the ragwort growing therewith, has been carefully removed by hand, it has certainly, already, clearly shown that neglect or carelessness in removing the plant will be surely followed by fatal results.

The mare, which has been fed for thirteen months on ragwort mixed with hay and chopped fine, is still alive and apparently healthy.

The experiment with guinea pigs has given nothing worthy of notice.

The vote of thanks tendered you by the Board of Trade and by the Municipal Council for the county of Antigonish, together with the many complimentary and encouraging letters from representative people of this county and elsewhere, show, clearly, that your work in eastern Nova Scotia is well understood and highly appreciated.

In addition to the work already mentioned, I have by your instructions, inspected all shipments of live stock from Bayfield and Mulgrave. The report, which I have the honour of sending you monthly, contains all particulars. You will have noticed that one hundred and thirty head of cattle, ten horses and twenty-three sheep were shipped from Bayfield and seven hundred and three head of cattle, ten horses and one hundred sheep from Mulgrave to St. Johns, Newfoundland. I wish to thank Mr. Edgar Whidden, the owner of the vessels engaged in the trade, for giving the best possible facilities for the proper performance of my duty.

I am glad to be able to say that so far as live stock is concerned, this has been one of the healthiest years in the history of this very healthy province. Glanders, rabies, cholera and other contagious diseases have been reported from time to time, but prompt and careful investigation proved the suspicious unfounded and suspected animals to be suffering from diseases of a non-contagious character. And with reference to this branch of the work, I wish to express my appreciation of the valuable services rendered by the biological laboratory under such capable management. It certainly is a great help to your inspectors, particularly in investigating obscure diseases.

I have the honour to be, sir,
Your obedient servant,

W. H. PETHICK,
Inspector.

The Veterinary Director General,
Ottawa.

F. TORRANCE, B.A., D.V.S.,

WINNIPEG, March 31, 1907.

SIR,—I have the honour to submit the following report of the investigation of Swamp Fever in horses during the past year.

Work began in January, when, on your instruction, I visited several farms in the vicinity of Dominion City and made an inquiry as to the prevalence of the disease in that locality, the result of which has already been communicated in my letter of February 3. There were no actual cases of disease discovered at that time, and nothing further was accomplished until June, when Mr. Baskerville wrote stating that the disease had again made its appearance in his own neighbouring farms. With your consent, I again visited the locality, and spent several days investigating the cases of the disease and obtaining specimens for further examination. The facts in connection with this trip to Dominion City have already been conveyed in my letter of June 26.

Through the kindness of Mr. Baskerville and his neighbour, Mr. Bratton, I obtained two mares afflicted with the disease, and shipped them to Winnipeg, where they remained under my constant supervision until they died. The Bratton mare was well advanced in disease, and lived only a few days after her arrival here, but the Baskerville mare survived until November 7. During this period daily observations of pulse and temperature were made, and at short intervals the blood was examined, in fresh and stained specimens under the microscope, and by counting the red and white corpuscles.

No trypanosomes, plasmodia or other organisms could be detected at any time, and cultures made from the living blood invariably remained sterile. A well marked peculiarity in the blood of the Baskerville mare was a greatly increased number of œsinophile cells, constituting the condition known as œsinophilia. This frequently indicates the presence of worms in the intestinal tract, and I consequently treated the mare vigorously with vermifuge remedies, but without causing the expulsion of any worms. At the post mortem, there were no worms discovered in the intestines, and the few specimens in a verminous aneurism of the great mesenteric artery could hardly be sufficient to account for this change in the blood.

Various remedies were tried, and during the first month there was a marked improvement in the mare under a course of arsenic, salol and nux vomica. She increased in weight, and the number of red blood corpuscles went up from 2,240,000 per c.c. to 4,650,000, and she seemed on the road to recovery. The improvement was, however, only transitory, and was followed by a retrograde movement, in which all the gain of the previous month was lost, and an additional amount as well. A progressive anæmia followed, accompanied by a gradual loss of bodily strength, the mare gradually became weaker and weaker until she could no longer rise without assistance, and finally died.

The postmortem in this case showed the following conditions: Body much emaciated, no subcutaneous or intermuscular fat. Pericardial sac contained several ounces of fluid. Interventricular septum of heart had a curious yellowish area an inch in diameter, extending from one ventricle to the other. Microscopic examination of this area showed the muscle fibres disappeared and replaced by cellular infiltration and commencement of fibrosis. This had probably resulted from thrombosis of a branch of one of the coronary arteries. The spleen was enlarged and adherent to the stomach by an inflammatory area enclosing a small abcess, which, was found to contain a pure culture of the colon bacillus. A verminous aneurism of the great mesenteric artery was found, also numerous calcified tumors of small size in the wall of the small intestine, the result of the activity of strongylus armatus. No other parasites found.

The postmortem in the Bratton mare revealed the following conditions: Body much emaciated and distended with gas. Yellow gelatinous infiltration beneath skin, along back and other regions. No fat muscles, pale and flabby.

Thorax.—Some effusion in pleural and pericardial sacs. Lungs resilient and mottled, and large vessels filled with clotted blood, clots chiefly yellow. Heart large, flabby, containing yellow (chicken fat) clots in ventricles. Numerous hæmorrhagic spots on endocardium and in heart muscle. Area of gelatinous infiltration surrounding coronary artery.

Abdomen.—Stomach small, contains about two gallons feed and one bot. Small intestines pale and nearly empty. Cæcum and colon similar. A few dead strongyles in cæcum. No other parasites. Lymph glands of mesentery enlarged and soft (Hyperplasia). Kidneys-right, pale and flabby, left endarged and contained pus (pyo-nephritis). Spleen enlarged. Womb and ovaries normal.

Several other postmortems were made, but with a few exceptions, they did not vary from the usual result. In one case there was a marked enlargement of the lymph vessels of the small and large intestine, and some of them were as large as a

lead pencil, and distended with a clear fluid, cultures of which remained sterile. The lymph glands were much enlarged and flabby, but showed only hyperplasia

Another case that apparently was typical of swamp fever, was found to be badly infested with parasites, the caecum and colon being filled with a squirming mass of tiny worms, the sclerastoma tetracanthum. These worms are known to produce anæmia in horses in other parts of the world where swamp fever is unknown, and probably their presence in this horse led to symptoms mistaken for swamp fever. Mr. Post, who lives on a farm, in the same locality as Mr. Baskerville, tells me he found the same kind of worms in a mare which died with, what was apparently, swamp fever, but he states the worms were found, not only in the bowel, but also in the muscles and beneath the skin. These may have been the agamous form of the strongylus armatus, a worm somewhat similar in appearance to the sclerastoma tetbracanthum and well known in its usual habitations, the large intestine and the verminous aneurisms of the mesenteric arteries. They have been found in the muscles and connective tissues by European observers, but I am not aware of any American discoveries of them in this situation. However, the worm is well known, and frequently observed in American horses, and there is no reason to doubt the accuracy of Mr. Post's observations.

It is evident, from these facts, that a disease closely simulating swamp fever in its clinical manifestation, may be accompanied or caused by the presence of large number of worms belonging to two closely allied species, sclerastoma, tetracanthum and strongylus armatus, but as these forms are not present in every case of swamp fever, they cannot be the cause of that disease.

In this connection it may be noted that there is a tendency among farmers and others to name any disease of a lingering or wasting character, 'swamp fever,' and in this way, swamp fever appears to be much more prevalent than it really is. Many of these so-called cases of swamp fever would be found, on closer examination, to be diseases of another kind, such as typhoid influenza, verminous anæmia and ordinary debility. Swamp fever has enough to answer for, without having to take the responsibility of these other diseases, and it is to be regretted that so great confusion exists. It is very easy to distinguish typhoid influenza from swamp fever, by two only of its characteristics, the loss of appetite and the deeper colour of the mucous membranes. Swamp fever shows no loss of appetite, at least until near a fatal termination, and the mucous membranes are paler than usual.

Anæmia from worm invasion is more difficult to differentiate, but as this is a rarer condition, it is not of so great importance. A careful examination of the fœces for worms, or their ova, would decide most cases. Debility results from previous attacks of disease or from lack of proper food and care, and the history of the case should decide to which class it belongs.

In conclusion I wish to express my obligation to Dr. Bell for valuable assistance in making cultures and examining specimens, and to Messrs. Baskerville and Bratton for the gift of cases of swamp fever.

I have the honour to be, sir,
Your obedient servant,

F. TORRANCE, D.V.S.,
Inspector.

The Veterinary Director General,
Ottawa.

S. H. WARD, V.S.

March 31, 1908.

SIR,—I have the honour to submit herewith my report covering the inspection of meats under the 'Meat and Canned Foods Acts,' from September 3, 1907 to March 31, 1908.

At the time the Act went into force, September 3, 1907, there were twenty-seven establishments designated by Order in Council as coming within the provisions of the Act, each being known by an official number. To enforce and carry out the regulations promulgated for the enforcement of the Act, thirty-nine veterinary inspectors were appointed, each establishment being under the supervision of from one to four inspectors according to its capacity. The veterinary inspectors received a thorough course of training in Chicago in all branches of meat inspection, and, in addition, were required to pass an examination prescribed by Order in Council before being eligible for appointment.

The duties of the inspectors are clearly defined in the regulations appended herewith. In their essence, the regulations are the embodiment of the various inspection laws formulated by countries in which meat inspection is maintained. The organization and practical working out of a competent meat inspection system applicable to the immense interests and peculiar conditions that exist in Canada, involved an amount of work that can scarcely be appreciated except by one who, like yourself, has given a great amount of time and thought to framing regulations consistent with the Act, and which had, of necessity, to cover and protect an industry which is but in its infancy, and which, up to the time at which inspection was enforced, had governed itself. Under the conditions which surrounded the enforcement of the Act on September 3, 1907, the department has cause to congratulate itself on the harmonious development which has attended the work of inspection. This can only be credited to your forethought in training an intelligent body of men who have striven to their duty with tact and credit to themselves and to you as the head of the branch. I am confident that their successful efforts were the result of pride in the knowledge that upon them to a large extent devolved the successful inauguration of a system which is of the utmost importance to the packers, and of still more importance to the country at large.

It is not necessary for me to go into the reasons which prompted the passage of an Act of such vast importance to the agricultural community. It is sufficient to say that, without the government guarantee of meat exports, it was but a question of a short time until foreign competition would quietly and effectually have swallowed up our bacon trade with Great Britain, by reason of the fact that their countries were certifying that all meats exported by them were from inspected animals and were sound and wholesome at the time of shipment. Public sentiment in Great Britain is asserting itself and demanding some guarantee that this meat supply from abroad be free from suspicion.

An investigation of Canadian packing houses, made some time prior to the passage of the Meat and Canned Foods Act, revealed nothing of an alarming nature, yet some conditions were found to exist that were felt might be corrected advantageously to the packer and the consumer. These conditions were remedied as early as possible after the Act went into force and the changes, to one who had visited the establishments prior to the enforcement of the Act, are very perceptible. The sanitary conditions at the establishments are well marked, and still more marked is the method of handling, not only in the process of cure, but in the manufacture of the various meat products. Our inspectors were impressed with the necessity of furthering the sanitary conditions at each establishment, and were instructed to inculcate personal cleanliness into the minds of employees, and it is encouraging to note the good results which have followed.

SESSIONAL PAPER No. 15a

Shortly after the inauguration of the inspection it was deemed advisable that a travelling inspector be appointed, and R. Barnes, V.S., inspector in charge of Toronto, was promoted to the position. His duties consist in visiting the various establishments from time to time with a view to establishing uniformity in the general work of inspection, and in investigating and reporting on the various problems which arise at all times and which go hand in hand with the enforcement of compulsory measures. The wisdom of the appointment is apparent in the good work which he has performed.

The question has been raised as to the value of inspection to the packers and to the public in general. The opinion so far among packers is that it is a good thing and was needed as a stimulus to the export trade. There has been, if statements are to be accepted as true, an increased number of animals slaughtered over previous years. During the first month the Act was in force there were very few establishments but were required to work four or five hours almost every night of the week in order to clean up the consignments of live stock. These extra killings ran over the months of September, October and November, and of course necessitated our inspectors remaining on duty sixteen hours a day owing to the fact that there were not sufficient inspectors trained in the work of inspection to relieve them. The department is to be congratulated on the fact that the inspectors faithfully remained on duty whenever the exigencies of the establishment demanded, notwithstanding the wearisome, and by no means pleasant, work of inspection, handicapped as the inspectors were for the first two or three months by cramped and, in many cases, badly ventilated killing floors.

A synopsis of the method of inspection is perhaps necessary that the regulations may be thoroughly understood. Every animal intended for slaughter is examined by a veterinary inspector in the yards or pens of the abbattoir before being allowed to enter the killing floor. Any animal found diseased, or suspected of being diseased, is tagged and held back until the end of the day's kill. As animals are killed the inspector makes a thorough examination of the carcass and all viscera. If no evidence of disease is found, the carcass is marked with a stamp or label showing the inspection legend,—The Crown and the words 'Canada Approved' together with the establishment number. Should any carcass be found showing evidence of disease such as to render it unfit for food, it is immediately marked with a 'condemned' tag. A carcass of which a doubt exists as to its condition has placed upon it a 'held' tag, and when the kill is over the inspector makes a further examination and disposes of the carcass according to his judgment. All condemned carcasses are tanked under the supervision of the employees of the department.

The postmortem inspection of swine is a most thorough one, and the inspectors have been impressed with the necessity of a systematic examination of the carcass. As you will perceive from the statistics, tuberculosis is the most common disease, the seat of the lesions in the majority of cases being the glands lying to the outside of the base of the tongue. So constant is the location of the disease in these glands, that it was deemed advisable that they be removed, and cut into by the inspector, as quite often evidence of disease can only be detected by section.

I feel at this time that some mention should be made in regard to the prevalence of tuberculosis in swine. It occurs to me that the virulence of the bacilli is greatly increased after gaining entrance to the organism of these animals. As glanders differs in virulence in the horse and the mule (running a remarkable rapid course in the latter animal), so does tuberculosis differ in virulence in the cow and in the hog. In the one animal it might be called a chronic disease, in the other, acute.

The question will suggest itself as to why this disease should be so prevalent and what means can be adopted to prevent its dissemination. The reports from our inspectors and our own observations tend to show that the creamery-fed hogs are very

prone to the disease, the infecting medium undoubtedly being the by-products of the creamery and cheese factory. Experiments have shown that skimmed milk contains as a rule, very large quantities of tubercle bacilli, as no means are taken at the creamery or cheese factory to render the milk innocuous. It is readily seen how dangerous the skimmed milk may be as a food, not only for swine but for rearing young calves. The remedy is an easy one and lies with the creamery and cheese factory, as the case may be. The sterilization of the by-products could easily be performed before the skimmed milk is handed back to the patron. It is necessary, however, in order to accomplish this end, that our provinces enact laws making sterilization compulsory, and appointing competent men to see that the same is properly carried out. It is questionable, however, if this will be done, at least in the near future. The prevalence of the disease in hogs has not yet been brought to the attention of legislators, nor have swine breeders realized the extent of the disease, and until this is brought to their notice, it is not expected that any active steps will be inaugurated looking to the control of the disease through the milk.

Your attention is directed to the large number of condemnations under the head of immaturity. The trade in calves usually opens up in March, it being the custom of farmers to sell their calves immediately they are born, shippers buying them from fifty cents to a dollar a head. They are loaded in double-decked cars and consigned to the large cities where they formerly entered into consumption for human food.

The fact that the carcasses of calves, anywhere from one to ten days old, were allowed to be placed upon the market for sale in our large centres, and designated as veal, was a disgrace to all connected with such traffic. Public health and sentiment were completely lost sight of by dealers in the profits which accrued from buying a 'food' (?) at one cent a pound and retailing to the housewife at fourteen cents. The custom of selling calves prevails in the dairy districts and is probably the result of the lack of forethought on the part of the farmer.

It would seem that two subjects, viz: The raising of calves and the thorough sterilization of all creamery skimmed milk, could with profit be brought to the attention of the farming community through the farmers institutes.

Section 19 of the regulations prohibits the entry into establishments of any carcasses or portion thereof, unless the same are marked or certified to as having passed inspection. Exception is made, however, in the case of dressed carcasses when the head, heart, lungs and liver are held by their natural attachments. This provision had in view the large trade carried on in dressed carcasses in certain sections of the Dominion. This trade is a relic of the times which prevailed two decades ago when farmers found a readier market for dressed carcasses than prevails at the present time. During the development of the country the demand for domestic cured meats was very large giving way, however, to the products of the various abbatoirs which sprang into existence with the advent of transportation facilities. Some opposition was experienced against this section, confined however, to the Counties of Essex and Kent, many breeders in these counties believing that all carcasses slaughtered by them upon their own premises, would come within the provisions of this section and that it would be necessary that the head, heart, lungs and liver be left attached, no matter to whom the carcass was sold. Representations were made that the dressed hog trade from this district would be killed were the department to enforce the regulation. In order to overcome the difficulty, it was suggested to the minister that local veterinarians be appointed and certain railway points designated at which shipments of carcasses could be inspected. Acting under instructions from the minister, an examination was held in Chatham on November 30, 1907, in order that veterinarians might be qualified as inspectors *pro tem.* The candidates presenting themselves for examination were informed in the presence of C. H. Higgins, D.V.S., pathologist, and A. G. Hopkins, M.D.V., who, with myself, conducted the examina-

tion, that appointments as inspectors would not make them eligible for permanent appointments. Notices were sent to various points in the counties of the proposed action by the department, and shippers were instructed to notify M. B. Perdue, V.S., of Chatham, of intended shipments. This inspection went into force on November 27, 1907, and from that time until this date only ten carloads, or a total of one thousand, eight hundred and thirty-seven carcasses, were shipped to four establishments at which inspection is maintained. It is somewhat strange that farmers persist in dressing their hogs, selling them at seven and a half cents a pound, when live hogs are worth from five to five and a half cents. As a rule a hog weighing two hundred pounds, live weight, will dress one hundred and forty pounds, or seventy per cent of the live weight. There can therefore be no advantage in slaughtering swine upon the farm.

A small trade in dressed carcasses of sheep is carried on in the Maritime provinces, the principal shipments being from Charlottetown, P.E.I The trade usually opens in the late fall months, and shipments are made to centres in the Dominion as far west as Winnipeg.

Since the inauguration of the Meat and Canned Foods Act. considerable agitation has arisen in various cities favourable to the establishment of public abattoirs under direct municipal supervision. This agitation indicates that the inspection of foods is becoming popular, and will develop and become more necessary with time.

I have the honour to be, sir,
Your obedient servant,

S. H. WARD,
Chief Meat Inspector.

The Veterinary Director General,
Ottawa.

C. H. HIGGINS, B. Sc., D.V.S.

Biological Labatory,
Ottawa, Canada, March 31, 1908.

Sir,—I have the honour to transmit this my report as Pathologist for the year ending March 31, 1908.

A great increase in my work and in the work of the Biological Laboratory, over that of any previous year has been witnessed. Not only has the routine connected with the examination of material forwarded for diagnosis, exceeded that of other years, but there has also been an increased amount of work in connection with the manufacture of biological products. Our disbursements in this direction are partially indicated from the fact that 879 registered packages have been forwarded from the laboratory containing anthrax and black-leg vaccines, mallein and tuberculin.

The pursuit of special research work has been impossible during the year, save in connection with some minor investigations where only a limited number of examinations were necessary, as we have been overwhelmed with the duties connected with the work above outlined.

We have, in addition to preparing all the mallein used by the department, prepared anthrax and black-leg vaccines and it is gratifying to note that these two pro-

ducts have given almost universal satisfaction wherever used. This year, through a slight change in the package and the designing of a new means of administration, the application of either vaccine is so simplified that less trouble is to be anticipated in disbursing than has hitherto been the case.

The alterations in the building which was completed early in the year have greatly simplified our work and the several preparations which we manufacture have been effectively separated, the one from the other, thus, the liability of any of our products to contamination from another or from the infectious work of the laboratory is reduced to a minimum. Each branch of the work is confined to a limited space, a feature which is absolutely essential where material of such widespread importance to the live stock interests of the country is prepared.

The inception of the meat inspection service under the Meat and Canned Foods Act, has caused an increase in our work through the necessity for diagnosis of conditions commonly seen in slaughter houses but which have hitherto received no attention nor have they been accurately diagnosed. Aside from the assistance which we have been able to render in this direction, we have obtained through this service many rare and valuable specimens which have been added to the museum of the laboratory.

Aside from the work of the laboratory and from my duties as Pathologist, I proceeded to Regina in June last, at at your request, placing myself at the disposal of the Commissioner of the Royal North West Mounted Police as a special agent of the Branch to exercise a general supervision over the enforcement of the compulsory mange dipping order. To this end, at the direction of the Commissioner and accompanied by Inspector Burnett, I visited Calgary, Macleod, Lethbridge, Medicine Hat and Maple Creek for the purpose of meeting and instructing the various inspectors who were to organize and supervise the work in their respective districts.

The transfer of the executive administration of the Health of Animals Branch in Saskatchewan and Alberta to an officer of your Branch having been decided upon, I later proceeded to Regina, remaining there to assist at its consummation by arranging for such details as were possible prior to the arrival of Dr. Hilton, the officer commissioned to effect the change. After this transfer and assisting in a few minor inspections for which no officer was available, I completed the inspection of the Boundary Stations in these two Provinces which was started previous to the change of administration, and also witnessed the operations of the Seabury Spraying Machine.

BOUNDARY STATIONS.

The Boundary Stations at North Portal, Wood Mountain, Willow Creek, Pendant d'Oreille, Coutts and Twin Lakes were visited by me for the purpose of ascertaining what changes were required to place the dipping plants at these points in first class order. The conditions found at these points as well as my detailed recommendations in connection with each were forwarded to your office immediately following the inpection and, therefore, need no further consideration at this time.

SEABURY SPRAYING MACHINE.

I was present at a point on the Little Bow river, about forty miles north of Lethbridge, during the setting of the Seabury Spraying machine in connection with a series of corrals and a chute erected for this purpose. Some difficulty had already been experienced by the men in charge of this apparatus prior to their arrival at this point in obtaining a proper emulsification of the oil and they found a similar difficulty with water taken from the Little Bow river.*

*A sample of the water from the LittleBow river taken at this time, (July 21st, 1907), was on my return to Ottawa, analyzed by Prof. Shutt of the Experimental Farm, who found that the total hardness was 11.5°. Basing an estimation on this degree of hardness it would take seventeen pounds of quick lime to soften one thousand gallons of this water.

In order to overcome the trouble and to determine the manner in which we could improve the emulsion, I conducted a series of experiments with this end in view. After the preparation of many trial emulsions it was found that an excellent emulsion resulted when twice the amount of hard soap recommended by the compulsory order for use with boiling soft water was used with the oil on hand (Beaumont) and the water taken direct from the river without treatment. Having thus arrived at the cause of the difficulty in the preparation of the emulsion a sufficient amount was prepared to operate the machine. After the thorough mixing of the emulsion by forcing it through the machine a number of times a sample was taken and this sample shows but a slight separation of the oil even at this writing (over nine months).

This machine, while thoroughly applying the emulsion to the cattle passing through it, so frightens the animals that considerable persuasion is at times required to induce an obstinate steer to enter the sprayer. To me it appeared much slower than a dipping vat and the only advantages which I could see that it possessed over such an arrangement, were, the small amount of material required to treat the cattle and the portability of the apparatus. These advantages, however, are of doubtful value when considered with the disadvantages. The general idea of the machine is good but it seemed to me that a machine into which the animals could be driven without such excessive prodding would possess many advantages over the apparatus that I saw.

Another difficulty in the application of oil emulsions with this machine seems later, to have been experienced through the alkali taken into it by the feet and on the hair and hides of the cattle to be sprayed. From some of the results it is apparent that the emulsion was improperly prepared or that there was sufficient of this alkali to alter the emulsification of the oil. Such a contingency was not considered when I witnessed the operation of the machine, therefore, no steps were then taken to provide for such errors.

Oil emulsions are such delicate mixtures that it will be necessary, if they are to be used in the future, to have their use more thoroughly supervised by men better trained in their preparation than was possible during last summer.

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Without further preliminary remarks I will proceed to enumerate a few of the special features connected with the work of the laboratory which will indicate the wide range in the scope of our work and some of the special means by which we have been able to assist in the general efficiency of the branch.

EXAMINATION OF SPECIMENS.

During the past year 339 series of specimens have been received from various sources throughout the country representing an increase of 166 series more than were received during the year immediately preceding.

The specimens which have been received during the year represent a far greater variety of conditions than has been the case during the whole period that the laboratory has been in operation. Many are valuable representatives of their respective classes and an examination of our records indicates that the senders in many instances are not individuals from whom we have received material previously.

From the laboratory standpoint, it is desirable that more care should be exercised in the preparation of specimens that they may reach us in better condition for diagnostic purposes. As a rule Inspectors who have had particular training in this respect or who are careful to follow the simple instructions which have been issued from time to time, supply specimens which are in excellent condition when we receive them. There are, however, many specimens with which we could have done

more to assist interested individuals had more care been exercised in preparation prior to their shipment.

We are in a position to render great assistance to the practitioner of veterinary medicine, a fact which has already been exemplified in numerous instances and such practitioners should be more eager to avail themselves of the opportunity offered by the facilities of this institution which are at their command.

In order that the greatest possible assistance may be available I will outline some of the main principles which should be observed in taking and preparing material for laboratory diagnosis.

The possibility of an accurate diagnosis is often nullified by the apparent carelessness in the manner of preparing the specimen transmitted to the laboratory and foreign micro-organisms have become so abundant that the lesions are obscured or the causative factor destroyed by the changes which have taken place during transit.

It must be borne in mind, however, that any solution which will preserve the tissue cells intact, or hold the form of an organ is necessarily antiseptic and will prevent the recovery of the organism in pure culture. Thus, where cultures are desired the greatest care must be exercised in the preparation of material and freezing is usually the most convenient solution of such a difficulty. As this proceedure is out of the question during a greater portion of the year we have indicated on a special circular, which is reprinted herewith, instances in which bacteriological diagnoses may be made from easily prepared material. Further, it is almost impossible to issue any general guides which will assist in preparing material so that we may make some use of it from a bacteriological standpoint.

To retain the peculiar selective staining characteristics of individual cells it is necessary to use such preservative solutions as have proven to be most suitable for the purpose, and the individual forwarding the material should consider the general rules prepared for his guidance in the various circulars which have been issued from time to time for this purpose.

The special general circular is reproduced herewith and the details to be observed in connection with the forwarding of material from suspected cases of anthrax, black-leg and rabies were outlined in my report of last year which is printed as a portion of the report of the Veterinary Director General, therefore, they require no further consideration at this time.

Dominion of Canada—Department of Agriculture.

Health of Animals Branch.

Instructions for sending Specimens for Microscopic Examination

In forwarding specimens of diseased tissues or organs for diagnostic purposes the following suggestions should be noted and carefully carried out in order to ensure their arrival at the laboratory in good condition.

Specimens for Pathological Examination.

Unless a specimen is so remarkable and characteristic that it should be preserved as an exhibition or museum specimen, it is unnecessary to send large portions. Small portions about an inch cube well selected from different regions are sufficient. They should be taken in such a manner as to exhibit the normal tissue passing into the diseased tissue. Together with the material which shows actual lesions, portions of an inch cube should be taken from the lung, heart, spleen and kidney. In many instances the microscopical lesions in apparently healthy organs give the clue to the affection from which the animal suffered. These small portions should be placed in a wide mouthed bottle or jar, with at least five times their volume of alcohol, or better still 4 per cent solution of formaldehyde.

Specimens from different animals should be placed in separate containers.

Large specimens may be packed in ice or frozen.

Hog Cholera.

Where this disease is suspected, in addition to the material above designated, a portion of the intestine is necessary, consisting of the last portion of the small intestine and the first portion of the large intestine, including the ileo-caecal valve.

Specimens for Bacteriological Examination.

Bacteriological specimens are easily contaminated by the many putrefactive organisms which exist in the air and soil and, with few exceptions, must be taken by some one thoroughly trained in bacteriological methods.

Anthrax.—A few drops of blood from an animal suspected of having died of this disease, placed on a clean piece of note paper, allowed to dry in the air, folded, placed in an envelope and forwarded to the laboratory provides sufficient material for diagnostic purposes.

Specimens for examination should be accompanied by a letter giving complete information concerning the case in question, with its history, clinical symptoms, &c.

Specimens must be labelled in order that they may be identified. The name and address of the owner of the animal and the name and address of the sender of the material are necessary in order that records may be kept and reports promptly forwarded to the proper parties.

Specimens not exceeding five pounds in weight after being securely packed, to prevent breakage of the containers or leakage (see Sec. 106 and Sec. 107, page XX, Canada Postal Guide), should be sent by mail.

Specimens exceeding five pounds in weight should be sent by express.

J. G. RUTHERFORD,
Veterinary Director General.

Specimens should be addressed,
Biological Laboratory, Ottawa, Canada."

When material is forwarded by mail the Post Office regulations must be complied with, otherwise the authorities may confiscate and destroy the material at the first office, in which case we never receive the material nor is there a record of its disposition. When sent by express equal care should be observed in ascertaining the regulations of the Express company thus avoiding the delays through the omission of some slight detail. Special precautions must be taken when the specimen forwarded is presumably of an infectious nature.

The details of labeling the material forwarded and of accompanying information therewith should be faithfully observed that delays may be avoided in examinations and that a report may be promptly issued to the proper party.

PRESERVATION OF SPECIMENS.

There may be and doubtless are many veterinary surgeons and others reading this report who may desire to preserve some curious or rare specimen prior to transmittal or for purposes of their own. To secure the desired preservation there are many methods which may be followed and therefore, I will detail those which have been found of greatest assistance.

Alcohol.—Until recently alcohol was the only preservative generally used for this purpose which did not destroy the structure of the tissue or the staining qualities of the cells. It is largely used at the present time for special purposes but for general use has the disadvantage of being expensive and causing a loss of the natural colour, bleaching the entire tissue to an almost pure white. It is however of value where formaldehyde, cannot be obtained and should never be used in less than an eighty per cent solution.

Formaldehyde.—The introduction of formaldehyde has overcome many of the obstacles formerly encountered in the preservation of specimens for museum and other purposes. In watery solution it has taken first rank over any other method of proceedure during the past few years. Its use is attended with many modifications each of which possesses some particular advantage for special purposes. Ordinarily it is used in a four per cent solution, which is prepared by adding one part of the commercial formaldehyde (40 per cent watery solution) to nine parts of water. Such a solution not only preserves the specimen but hardens it, rendering quite soft tissues very firm. The only objection to the solution for the general preservation of specimens for museum purposes is, that the tissues will show considerable bleaching, but, for material which is to be subsequently used for miscroscopic purposes it is very serviceable. Special modifications in the dilution with water and the addition of other chemical agents are used for special purposes.

Kaiserling's Method of Preserving Museum Specimens.—By following the proceedure recommended by Kaiserling specimens are obtained which preserve their natural colours almost indefinitely provided they are not exposed where the light is too strong. The method of procedure is somewhat tedious, and requires the use of a number of solutions which are as follows:—

No. 1.—Potassium nitrate, 15 grammes; potassium acetate, 30 grammes; formaldehyde (40 per cent.), 200 cubic centimetres; water, 1,000 cubic centimetres.

Medium sized specimens are usually left in this solution for five days after which they are removed to the solution No. 2, which is an 80 per cent solution of alcohol, in which they remain for one to six hours. They are removed to 95 per cent alcohol for one to two hours to restore the colour which is somewhat affected in the fixing solution.

The final preservation is in solution No. 3 which is as follows:—

No. 3.—Acetate of potassium, 200 grammes; glycerine, 400 cubic centimetres; water, 2,000 cubic centimetres.

Unless the water available for the last solution is very clear it is better to use distilled water. This last solution is liable to contamination when no preservative is added, but the specimens as a rule contain sufficient formaldehyde or alcohol to prevent the growth of moulds or fungi. By this method the original colours are preserved in almost their original shades on placing the specimen in its final preservative fluid.

When the surface of the specimen has lost some of its natural colouring, due to prolonged exposure to light, the colours can be restored by placing in 95 per cent alcohol for variable length of time till the colour returns, or a thin slice may be cut from its surface exposing the unbleached tissue.

Heidenreich's method of Preserving Museum Specimens.—While it is necessary to use a very expensive solution in the preservation of museum specimens by Heidenreich's method, it is ultimately less expensive than the foregoing in that the technique is much simpler and the results are fully as effective. We are at present using this method in preference to any of the many methods for holding the colours on valuable museum material. The details are as follows: A stock solution, Holzin, consisting of three parts of 40 per cent. formaldehyde and two parts of methyl alcohol is prepared. The solution is made by adding this holzin to the following mixture:—

Holzin, 70 cubic centimetres; glycerine, 700 cubic centimetres; water, 300 cubic centimetres; chloral hydrate, 150 to 200 grammes.

This is the only solution required and the specimens are placed directly in this fluid in which they will harden. There is no handling of specimens impregnated with chemicals which are dangerous to handle with the unprotected hands and much less time is required in the preparation of the material.

In the placing of specimens in this or any other preservative great care should be exercised to prevent pressure on any part through the use of too small a container or by the weight of the specimen being so great as to flatten it on the bottom of the container, otherwise valuable material will be so distorted in shape and general appearance as to render it almost valueless for exhibition purposes.

A few specimens prepared according to Heidenreich's method have been exposed to bright daylight in the laboratory for varying periods up to three months without any apparent alteration in the colours. While this has been the case it is far safer to keep specimens either in subdued light or complete darkness. This method has an advantage over that of Kaiserling in that specimens preserved by it may subsequently be used for microscopic purposes, there being no marked alteration of the staining qualities. Unless we find some defect in this method not apparent at the present time we will continue its exclusive use for museum material.

As in the past we shall be very glad to receive material which is of value for museum purposes and due acknowledgement will be given to the individual forwarding the same in the labeling of specimens on the shelves of our museum. It will be a pleasure for us to show interested parties our museum which contains specimens illustrative of many of the features connected with the general work of the branch.

In a report on the work of the laboratory for the year just ended it is not our purpose to describe each individual specimen with which we have dealt, some, however, have been of more than passing interest, not only to laboratory workers but to the various inspectors attached to the Health of Animals Branch and to the individuals whose interests have been involved in the diagnoses rendered by us. It is, therefore, my intention to briefly describe such material and in some instances to reproduce photographs or drawings. These data are classified alphabetically as it has seemed the most appropriate for the purpose.

ABNORMALITIES.

A very interesting specimen of a bifurcation of the small intestine and its subsequent anastomosis was forwarded to the laboratory by Inspector T. M. Pine.

ACTINOMYCOSIS.

Three cases of this affection have come to our notice during the year. In two instances the differential diagnosis was established from *Actinobacillosis* by animal inoculation. In the other instance a positive identification from *Actinobacillosis* was impossible owing to the condition of the material on its receipt at the laboratory.

ANTHRAX.

Material has been examined from twenty-two suspected outbreaks, although we were able to positively identify the diseases in one instance only. The identified outbreak occurred at Collingwood, Ont., and there is a history of this disease having been manifest on this same farm two years previously. Another outbreak was investigated by Dr. Hadwen in the vicinity of St. Hyacinthe, Que.

Some difficulty is still experienced in the examination of material from suspected cases of this disease owing to the lack of care in taking material for microscopic examination. The instructions given in the circular should be followed very carefully if it is desired that we render the greatest possible assistance in diagnosing this affection.

BLACK-LEG.

Material from six suspected cases of Black-Leg has been dealt with, one with a positive finding, two were negative and three were doubtful. The general idea seems

to prevail that infection in Black-Leg is similar to that of anthrax and that the blood is equally serviceable for diagnostic purposes in either case. This idea is correct to a certain degree, but the blood should be diluted with an equal amount of pure glycerine and forwarded in a small vial which must be properly sealed. The glycerine destroys the saprophytic non-spore bearing bacteria, but does not kill the spores of either Black-Leg or Anthrax. We, therefore, are able, when material is furnished as directed, to positively identify and differentiate between the two diseases by animal inoculation.

As a rule, the presence of gas beneath the skin covering the affected muscles together with the discoloured appearance of the muscles themselves and the fact that the blood clots after death are sufficient for a diagnosis in the field. When a confirmation of a clinical or post mortem diagnosis is desired, a few drops of the bloody serum from the affected muscles placed on a clean piece of note paper and allowed to dry in the air, furnishes sufficient material for examination.

CALCULI.

Two excellent specimens of bilary calculi have been received and are valuable additions to our museum. One is about an inch in diameter and was forwarded by Inspector H. E. Marshall from Hamilton, Ont., while the other is about two by three inches and was forwarded to us by Inspector Ransom of Peterboro, Ont.

CYSTICERCUS BOVIS.

An excellent specimen of this condition was forwarded by Inspector Fisher while he was stationed in Winnipeg, Man. Portions of the masseter muscles, pillars of the diaphragm, lymphatic glands, and the heart presented numbers of these encysted parasites. This is the only specimen of beef measle which has come to our notice during the existence of the laboratory.

CYSTICERCUS CELLULOSAE.

Three specimens of this condition have reached us, two from Toronto and one from Calgary. We have from this material been able to obtain a sufficient number of cysts for purposes of demonstration to interested parties when visiting the laboratory and also have a number of specimens for the shelves of our museum.

CYSTICERCUS TENUICOLLIS.

Three specimens of this condition have been received, the first having been forwarded by Inspector Fisher of Winnipeg and was taken from a sheep. The second was forwarded by Geo. W. Collison, M.D., Brinston Corners, Ont., and was also removed from a sheep. The third was forwarded by Inspector J. H. George who removed them from a hog and we were able to demonstrate a pyelo-nephritis involving the kidney as well as the cystic form of the parasite under consideration.

ECHINICOCCI.

The first specimen of echinicocci was forwarded to the laboratory by Inspector Marshall from Stratford, Ont., who reported that there were eighteen cysts in the liver. This specimen proved to be of the multilocular variety. The other specimen was furnished by Inspector Thompson of Collingwood and was of the polymorphous variety.

FATTY DEGENERATION.

Inspector Kellam of Montreal forwarded a portion of a carcass to the laboratory for us to determine the cause of a peculiar colouration of the muscle and strong odour which was present. Microscopically we found this tissue to be greatly de-

generated and infiltrated with fat, in all probability a result of the food which the animal received for some time prior to its slaughter.

FLOATING KIDNEY.

A live sheep was brought to the laboratory in May for us to determine the trouble from which it was suffering, it having been decided that the animal was of no further value. There was a history of its having been handled the day previous for the purpose of shearing, after which it was noticed to be very unsteady on its legs. The sheep was destroyed and we found that both kidneys were floating in the abdominal cavity. There was considerable fluid contained in the abdomen and this was found to have been due to hemorrhage through the capsule of the kidneys. The hæmorrhage was considered to have been the result of the twisting of the kidney upon itself occluding the renal vein and thereby increasing the blood pressure within the organ, a result of the handling during shearing.

GLANDERS.

A number of examinations of material from suspected cases of glanders have been made during the year, some of which were undertaken with a view of recovering the causative organisms for use in the manufacture of mallein. As our remarks upon mallein are more fully considered elsewhere in this report I will not consider the details in this connection at this point.

HOG CHOLERA.

There has been a marked decrease in the number of instances in which we have been called upon to determine the presence of the lesions of this disease in material forwarded for examination. We have received specimens from seven outbreaks only, two of which were positively identified as hog cholera.

LEUKAEMIA.

One suspected case of this disease in a hog was dealt with during the year. We were, however, unable to assist in its positive identification owing to the fact that some delay was experienced during the transit of this material from the packing house to the laboratory. An allied condition in the human being has been the subject of much study from laboratory workers and it would be interesting for us to avail ourselves of all material which may be obtained from similar cases in the lower animals. Apart from the examination of the spleen, the lymphatic system, and the medullary substance of bone, the kidneys and liver should be supplied for examination as they are at times involved. Perhaps the most important detail in a study of such cases is a careful examination of the blood, and to this end blood smears should be furnished in addition to the organs above mentioned.

NECROSIS.

Three forms of necrosis have been observed in material received.—cold necrosis in the hog, fat necrosis in an ox and osseous in material taken from a hog. In no case have we encountered a necrotic condition which could be ascribed to the bacillus necrophorus.

NEPHRITIS.

An opportunity has been afforded us to study a chronic interstitial nephritis in a hog where both kidneys were involved. The kidneys in question were supplied by Inspector Pine of London, Ont., and were taken from a hog presenting no other lesions as observed at post mortem inspection. There was no suspicion of such a change

prior to the slaughter of this animal. This is the first time that such a condition has come under our observation although it has been quite frequently observed in material of human origin. The study of such a condition is interesting, not only from the bearing which it may have on the traffic in the lower animals which are utilized for food purposes, but also in the relationship which conditions in the lower animals bear to those of the human family.

OESOPHAGOSTOMA COLUMBIANUM.

We have received two good specimens of this affection during the year and these are now preserved and placed in our museum. One was taken from a sheep while the other was found in an ox. The principal economic importance of this nematode infestation is that the presence of the nodules induced by this parasite destroys the intestines for sausage casing purposes. Where the lesions are extensive there may be a marked anæmic condition observed in the host animal.

OILS.

During the early part of the year some experimental work was undertaken with various oils to determine the best method to combine them in an oil emulsion, and the effects which they produced when applied in varying strengths on cattle. That more satisfactory conclusions might be arrived at individuals of the experimental tubercular herd were sprayed with emulsions of various formulæ and with proprietary dips. We were able to gain much valuable information through these experiments and this information assisted greatly in advising the Inspectors directly concerned with the enforcement of the compulsory mange-dipping order. It may be well to point out in this connection that we do not observe similar results from such emulsions applied under the conditions existing in Eastern Canada as are observed when they are applied to cattle on the range where the conditions are so vastly different. A harmless preparation to eastern cattle might be followed with quite serious consequences when applied to cattle on the range.

PICTOU CATTLE DISEASE.

Our studies on this disease were confined almost exclusively to an examination of the tissues forwarded by Inspector Pethick, obtained from the various experimental animals under observation in the investigation of this disease. Material from one hundred and fourteen cases was examined and in the material from two of these cases we were able to detect positive evidence of the affection under consideration. No experiments have been conducted at the laboratory during the year with this disease.

PNEUMONIA.

Four cases in which the condition proved to be a pneumonia have been dealt with. One is of particular interest coming as it did from a horse which had been improperly drenched and was of mechanical origin.

PYAEMIA.

Material from a single case of this affection in a hog was forwarded to us in which the infectious agent, streptococcus pyogenes was isolated in pure culture.

RABIES.

We have been called upon to diagnose nine suspected cases of this disease during the year and four of these suspected cases have given positive evidence of its existence in the animal from which the material was obtained. Of our positive findings, one was received from Niagara Falls, Ont., one from Bridgeburg, Ont., one from Shoal

Lake, Manitoba, and the other from Moosomin, Sask. In diagnosing this affection at this laboratory we have used the older method of animal inoculation exclusively for the confirmatory evidence, although we have also searched for the bodies of Negri. While the presence of the Negri bodies is considered an almost certain means of diagnosing this affection, we have preferred the older method as we have to deal with such a limited amount of material that it is necessary to be absolutely certain of our diagnosis in every instance. Then too, the examinations for the Negri bodies require considerable skill and constant practice on the part of the examiner. This constant practice is denied us from the fact that we are called upon to diagnose but a very small number of cases each year.

We would particularly direct the attention to the method of taking, and forwarding material from suspected cases of this disease which appears in another portion of your report.

STRONGYLIDAE.

That these parasites are still causing considerable loss particularly to the hog industry, is indicated by the large number of lesions observed by some of the Inspectors stationed at slaughter houses. We have been called upon to diagnose the affection in but two instances in each of which the strongylidae were found. In one case the strongylus paradoxus was found in the lungs of a hog sent in from one of the packing houses for identification of the lesion which was reported as a very frequent one. In this instance the hogs originated from southwestern Ontario where we observed some years ago enormous numbers of these parasites in the lungs of hogs which had been slaughtered on account of having been affected with Hog Cholera. The other instance of finding strongylidæ was in the lungs of a sheep which were forwarded from Nova Scotia, where the owner had lost a number which he reported were similarly affected. In this instance we were able to identify the strongylus rufescens.

TRICHINOSIS.

This affection appears to exist to a very limited degree only, among Canadian hogs. We have observed its presence twice in material from three suspected cases. It is of very little economic importance when it is considered that thorough curing or cooking will destroy the life of the parasite. The detection of its presence is somewhat difficult and we have examined fully one fourth of a cubic inch of muscle taken from the pillars of the diaphragm without finding evidence of its presence and after this have been able to find an occasional parasite.

TUMORS.

Probably the most interesting feature of our work during the year has been the examination of various tumors which have been sent to the laboratory with a view to their accurate classification. We have received nine from the lower animals and a number from human beings. The tumors originating in the lower animals only, will receive our consideration at this time, as the material from the human subject has been largely received from local medical practitioners and hospitals, to confirm clinical diagnoses and to determine the advisability of operations, or the liability of certain new growths to reoccur after their removal.

Tumors from the lower animals have received very little attention and we shall be glad to receive available material that we may continue our studies, not only with a view of determining their relative frequency of occurrence, but also the frequency of certain forms in particular species and the bearing which this may have on tumor formation in the human subject.

CARCINOMA.

A tumor removed from the rumen of a bovine was forwarded to the laboratory by Inspector Ross of Winnipeg. This tumor which weighed 1800 grammes consisted of many lobules containing a jelly like substance. Microscopically the tumor was found to be a gelatinous carcinoma.

DERMOIDS.

A specimen received in February, consisting of small nodules in the parietal and visceral peritoneum, was detected by Inspector Evely and forwarded from Winnipeg. These nodules were found to contain hair, rudiments of teeth, skin and other structures which originate from the epiblast. The condition is a rare one and results from the embryonic inclusion of cells properly belonging to other portions of the system.

ENCHONDROMA.

A single specimen of this form of tumor, which is not uncommon in cattle was received from Chas. Haley, V.S., of Iroquois, Ont., and exhibited the usual structures. It was located on the sternum of a cow ten years of age.

ENDOTHELIOMA.

In one instance only have we observed this form of tumor, the material having been forwarded by Inspector Kellam of Montreal. The history of this case and the description of the lesions found at autopsy are described by him as follows:—

'The specimens sent are typical in appearance, but not in size and were taken from the peritoneum in the region of the upper flank, rumen, omentum and diaphragm. The animal was an aged cow, in fair condition, pregnant about the sixth month, and the abdomen was pendulous.

Post Mortem.—All organs in a healthy condition except the liver, spleen and peritoneum. The parietal portion of the peritoneum was literally covered with growths varying in size from a pea to that of a half bushel basket. Two of the growths were considerably larger than a half bushel basket. The smaller lesions were sessile, of a uniform white colour and firm in consistency. Those from the size of a pigeon's egg and larger, were cystic, pedunculated, having a strong fibrous capsule within which was a gelatinous substance, white or pale yellow, and in the centre there was a quantity of pale yellow fluid. The peritoneum covering the uterus, spleen, liver and intestines was also involved. The growths were not found on any membrane except the peritoneum, and there were sufficient of these growths to nearly fill a two bushel basket.'

This form of neoplasm is rare in bovines and we were very glad of the opportunity afforded for its minute examination.

SARCOMA.

Opportunity has been afforded to study sarcomatous lesions in the fish, ox and hog.

The fish sarcoma was observed in two pike forwarded to the laboratory by Inspector Fisher. Both fish had several large, irregular, rough looking white growths on their bodies and were in poor condition. They were caught in Mississippi lake near Carleton Place. Microscopically the growths exhibit the characteristics of a round celled sarcoma. They were evidently of rapid growth and as instanced by the large number of mitotic figures were decidedly malignant. Dr. Fisher reports that numbers of fish are caught each year exhibiting similar growths. These tumors are interesting, mainly from the fact that it establishes that this class of tumors can and do occur in cold blooded animals.

The sarcoma of the ox which we studied occurred in the region of the hock, extending up the quarter to within a foot of the tail. The enlargements were subcutaneous, irregular in size and the portion examined was one centimetre thick ten centimetres long and five centimetres wide, of a yellowish colour and quite soft in consistency. On section, portions were found to be semi-gelatinous. Microscopically, numerous mitotic figures were to be observed and there were also degenerated areas containing a homogenous mass. A slight amount of fibrous tissue was present and many atypical cells were noted. The specimen was forwarded by Inspector Pine.

The hog sarcoma which we examined was forwarded by Inspector Walsh and was attached to the kidney. It weighed two hundred grammes, was of a pinkish colour, fairly firm and attached by a band to the base of the kidney. Microscopically it proved to be an adeno-sarcoma.

TUBERCULOSIS.

We have, as formerly, dealt with a large number of suspected cases of tuberculosis, and of those received during the year we have made nineteen positive identifications and in seventeen suspected cases have failed to find evidence of the characteristic lesions. The details connected with the examination of the above mentioned material is of general interest. In addition to the routine work with this disease we have isolated the causative organism from a number of cases retaining the cultures thus obtained for future study as time and opportunity permit.

WATER EXAMINATIONS.

We are occasionally called upon to examine water for an opinion as to its potability. Four such samples have been received, three of which were found on examination to be unfit for human drinking purposes. The remaining sample was sent in a container that had previously held medicinal agents and it was, therefore, impossible to arrive at a definite conclusion as to its potability.

WHITE DIARRHOEA OF YOUNG CHICKENS.

The subject of 'white diarrhœa' has received a great deal of attention from poultry raisers and scientific investigators in Canada and the United States within the past few years. It has cost each country an immense amount of money through the loss of chicks, and this at times when they were most needed by interested individuals to keep up certain strains, or to replenish the stock used for food or egg purposes. Unfortunately the term is a decidedly bad one, for, under this name it is quite evident that various observers are describing affections widely different from one another.

My first interest in this disease was a visit from Prof. Graham of Guelph, Mr. L. H. Baldwin of Deer Park, and Mr. Elford, Chief of the Poultry Division of this Department, during their investigations as members of a special commission appointed by the Ontario Agricultural College. During their visit to the laboratory we discussed the various phases of the subject and arrangements were made by which I was to examine material which they should send for investigation purposes from a poultry ranch within a short distance of Ottawa. As the manifestations of this affection at the ranch in question had ceased prior to their visit, chicks were not received, but, having become interested in the subject I at once took the necessary steps to secure the material required for purposes of investigation.

Very recently articles on the subject have been issued by Morse,*and by Rettger and Harvey.†

*Circular No. 128 Bureau of Animal Industry, Washington, D.C., 'White Diarrhœa of Chicks With Notes on Coccidiosis in Birds,' by Geo. Byron Morse, M.D.,D.V.S.

†Journal of Medical Research. Vol. XVIII No. 2, 1908. 'A Fatal Septicaemia in Young Chickens, or White Diarrhœa,' Rettger and Harvey

The conditions which these authors have studied seem to be quite different from each other and from the observations which I have made, and while the white diarrhœa is a manifestation in each instance, I have been unable to find the lesions or etiological agents which they record. Further, I have been unable to reproduce the condition by co-habitation, either with affected chicks or in an infected brooder. I have not seen the chronic lesions reported by Morse, nor have I observed the condition in older chicks as instanced by Morse or by Rettger and Harvey.

In all of the instances where I have observed the affection the manifestations appeared within the first week after hatching.

I make the above statements that there may be no mistaking the condition to which my remarks refer, as it is very evident that this common term has been used to designate a number of affections widely separated from an etiological standpoint. These variations in etiological factors are undoubtedly the source of much of the present chaotic state in which we find ourselves on the subject of white diarrhœa. It seems that investigators and poultrymen consider that the form of this manifestation with which they are familiar is the only one which occurs, and hence, any remedy which is efficacious in one instance will prove a panacea in all instances where this condition in any of its varied forms is dealt with.

That poultrymen should make this mistake is not to be wondered at, but, it is scarcely excusable for scientific workers to consider that the existence of white diarrhœa is due to but one etiological factor and we should at once endeavor, when advising poultrymen on the subject of this disease, to properly analyse their statements that we may acquaint them with the best means of preventing that form of disease accompanied by this manifestation, with which they are familiar.

In the study of this affection material has been used from three outbreaks and certain opinions have been formulated as to its cause in these particular instances. We have not developed the theory that it is due to an infectious agent for we have had conclusive evidence, in at least one instance, that it was not communicated to chickens which were purposely placed in a brooder containing a large number of chicks affected with the disease. No effort was made to disinfect, nor were any precautions taken which would tend to eliminate the disease from the brooder in question, had the affection been due to a specific infectious agent. The details of the theory which was formulated from these observations, has, I believe, been made public through the poultry press of Canada, but is deserving of a little fuller explanation at this time.

The experiment conducted at my suggestion, and the various steps taken, were closely observed from day to day. Strict care was exercised in the identification of the chickens by markings placed in the webs of their feet and every precaution was taken to prevent the possibility of an error occurring through a lack of system in our observations. The conclusion reached, is, that the 'white diarrhœa,' with which we are familiar, is due, not to an infective agent, but to a defective anatomical development prior to the emerging of the chick from the shell. I am, however, unable to offer an opinion as to the exact cause of this defective anatomical development but, it is a fact that the chicks which I have examined, dead of the so-called ' white diarrhœa,' have only a partial absorption of the yolk sac. Normally this yolk sac is wholly absorbed at the completion of the period of incubation, or within the first few days after the chicks emerge from the shell. Where this sac is not absorbed, 'white diarrhœa' is extremely liable to make its appearance soon after the chick commences to eat and the food fills the proventriculus, the gizzard and intestine. By the distention of the above named organs with food the yolk sac is mechanically pressed against the cloaca or posterior portion of the bowel, rendering the passage of fœces to the vent impossible, and no relief being afforded the chick dies of stoppage. The 'white diarrhœa' is merely a coincidence occasioned by the fact that the ureters enter the cloaca from above and posterior to the point at which closure is caused by the pressure of the yolk sac, and there being no obstruction they are easily voided. The urates are white, and of semi-

solid consistence, hence the name 'white diarrhœa.' That the condition referred to may not result from defective incubation or an inherent weakness in the parent stock is beyond our present knowledge.

I consider that it is non-infectious from the fact that during the experiment above referred to the affection was not communicated to newly hatched chicks placed with chicks which were dying as a result of this condition, and the circumstances were those which would assist in the propagation of a disease of an infectious nature. Chicks subsequently placed in this brooder were not troubled with the affection. Concerning the details of the affected chickens in this instance, they were hatched in an incubator, but nothing is known of their parent stock, &c., as they were shipped from a distance of 800 miles, arriving the third day after hatching.

From chicks dead of the so-called 'white diarrhœa,' I have obtained a variable bacterial flora, but it was impossible to associate any single organism with a series of cases.

If individuals observing this affection will make careful autopsies, they will undoubtedly be able to observe the conditions found at this laboratory in all cases examined to date.

The treatment of affected chicks offers little encouragement, as we are unable to reconstruct the defective anatomy of individual chicks. Pressure on the yolk sac, and by this pressure the removal of a certain amount of its fluid material may relieve the trouble, or even pressure, with a view of emptying the posterior portion of the bowel, is attended with variable results. These methods must be practiced with great care, otherwise the chick will be killed by manipulation.

In chicks which are found to have the yolk sac only partially absorbed when emerging from the shell, the retention of all food for at least four days may be a precautionary measure of some value.

BIOLOGICAL PRODUCTS.

Our routine work during the past year has been largely taken up in the preparation of biological products. Those with which we have been particularly concerned are anthrax vaccines, black-leg vaccine and tuberculin. The anthrax and black-leg vaccines were manufactured by us for the first time during the early part of the year, and we have obtained experience in this connection that cannot fail to be of immense service to the live stock interests of the country in the future.

Aside from the ability to prepare these products, there is the commercial gain to the live stock interests of the country which must be considered. A careful estimate of the cost of labour, supplies, &c., used in their manufacture, compared with the amount which would have to be paid to commercial houses for these products, indicates that there is a saving sufficient to very nearly compensate for the cost of conducting the whole work of the laboratory. The commercial feature, in this instance, however, should not alone be considered, for the direct control of the Health of Animals Branch over the preparation of a product where such interests are at stake as is the case in the testing of horses with mallein, should alone be a sufficient guarantee for a liberality far greater than has been necessary in the conduct of this institution.

MALLEIN.

We have disbursed 20,946 doses of mallein during the year on instructions received from your office. This is about one-third more than was disbursed during the same period of the previous year. With our new facilities, and the new methods which we have adopted in its preparation, there will be little difficulty in maintaining the supply required by the branch.

A statement of the amounts disbursed each month is as follows:—

	1906-7.	1907-8.
April	1,370	1,750
May	702	1,600
June	1,400	1,308
July	1,645	2,205
August	1,730	1,675
September	1,786	1,150
October	1,245	1,835
November	598	1,895
December	225	553
January	712	2,090
February	830	1,320
March	2,060	3,565
Total	14,303	20,946

It has been our experience that mallein is the most difficult of all the products which we have been called upon to prepare either experimentally or for general distribution. The care required in its preparation is great and the impossibility of following any hard and fast rule in its standardization increases the personal element in maintaining its potency. The experience which we are in possession of enables us to prepare a very uniform product, judged by the satisfactory results obtained by the various inspectors entrusted with its use.

TUBERCULIN.

There have been shipped from the laboratory, on instruction from your office, 5,934 doses. The product which we have disbursed has been of German origin. We have now a large amount of this material of our own manufacture at the laboratory, and can easily furnish the requisite amount required to meet the needs of the branch.

I append hereto a statement of the amounts as they have been disbursed month by month.

	1906-7.	1907-8.
April	267	509
May	349	848
June	160	206
July	184	257
August	161	336
September	254	583
October	118	276
November	423	565
December	336	735
January	589	562
February	437	575
March	152	482
Total	3,430	5,934

BLACK-LEG VACCINE.

We have forwarded from the laboratory, as directed by your office, 7,031 doses of black-leg vaccine and 115 outfits for its administration, during the year just ended. A detailed statement of the monthly disbursements is as follows:—

	1907-8.	
	Black-leg Vaccine.	Instruments for Application.
April	250	4
May	392	9
June	554	3
July	392	29
August	254	9
September	586	11
October	998	11
November	785	9
December	1,560	12
January	....	..
February	270	5
March	990	13
Total	7,031	115

While it is but natural that we should encounter difficulties in the preparation of this product, we have learned much during the past year concerning the details of its preparation and have been able to design special appliances which have greatly reduced the labour connected with its manufacture. The circular which accompanies our disbursements of this vaccine is as follows:—

"*Dominion of Canada—Department of Agriculture—Health of Animals Branch—Biological Laboratory.*

Black-leg Vaccine.

Black-leg vaccine, properly used, affords protection or immunity to a subsequent artificial or natural infection. The vaccine for protecting cattle against black-leg prepared at this laboratory is dried on braided silk threads, and these braided silk threads are held by a special spring clip to the stopper of their sterile container. Black-leg vaccine is an attenuated or weakened virus prepared from virulent black-leg material. The process of attenuating or reducing the strength of this virus is confined to the laboratory, and cannot with safety be conducted elsewhere.

To protect or immunize an animal against black-leg we prepare a single vaccine, and protection or immunity is the result of the animal passing through a mild, properly graded attack of the disease, which, as a rule, causes no inconvenience to the patient, save a slight elevation in the temperature. During this mild attack of the disease it is advisable to take particular care of the animals, protecting them from inclement weather, extremes of heat or cold, &c. Protection or immunity is established in from twelve to twenty days after the administration of the vaccine. During this interval from the administration of the vaccine until immunity is established, vaccinated animals should be kept from grazing on infected pastures, and no hay from infected lands should be used for feeding.

Vaccine used on an animal already affected with black-leg will not protect such an animal, nor will it prevent its death. The use of black-leg vaccine during or immediately after the occurence of an outbreak of black-leg may be followed by death, in some instances due to the stimulation of the black-leg germs already in the system

of the animal, and such accidents cannot be prevented. In the use of black-leg vaccine it is well to take the temperature immediately before inoculating and in the event of the temperature being elevated, vaccination should be deferred until the temperature of the animal is again normal.

EACH CONSTITUTES A SINGLE DOSE AND IS READY FOR USE AS SUPPLIED.

The threads should be handled with the needle only.

Method of application.—By using the vaccine prepared at the Biological Laboratory, together with the vaccinating outfit supplied by the department, the method of introducing the vaccine beneath the skin of the animal is very simple. (*See* special instructions for the use of the outfit.) The site of inoculation should be prepared by clipping away the hair and washing with alcohol or boiled water.

With the needle properly placed in the needle holder and the braided silk thread of impregnated vaccine on the needle, a fold of skin is grasped with the left hand, while the right forces the needle, carrying the braided silk through the skin until the silk is lost from sight, when the needle is immediately withdrawn and the impregnated silk is left behind.

The most convenient point for inoculating is behind the shoulder; however, any point where the thread may be introduced beneath the skin into the cellular tissue of the animal to be vaccinated is suitable.

Cattle over four years of age are not, as a rule, susceptible to the disease. Calves under six months are not fully immunized by vaccination, and if vaccinated prior to this age should be revaccinated in three months. It is preferable to use the vaccine in the spring before the animals are allowed access to infected areas, for at this time of the year they are usually less resistant to a natural infection than at other periods, and, unless vaccinated, they are more liable to a fatal infection.

In the manufacture of black-leg vaccine at the Biological Laboratory every possible precaution during its preparation and subsequent testing is taken, but the department can assume no responsibility for untoward effects following its use.

The price of black-leg vaccine is 5 cents per dose, a dose consisting of a single thread of vaccine.

The price of the vaccinating outfit is 50 cents.

Black-leg vaccine and vaccinating outfits may be procured by applying to the Veterinary Director General, Ottawa, Canada."

A NEW VACCINE PACKAGE.

After having successfully manufactured black-leg vaccine I was confronted with the problem of devising a suitable package for its disbursement. The older method of having it in powder form and the user preparing a solution of this powder in the field, was at once discarded as being too complicated, entailing too much detail work under very unfavourable conditions. After carefully examining the various existing devices used by commercial houses, each was discarded on account of defects which were very apparent. Consequently, I devised an entirely new scheme, briefly detailed in my report of last year on which some improvements have been made, and we now have a package to which scarcely an objection can be offered. The impregnated threads are attached by a spring clip to the cork of their sterile container and these threads are held with sufficient firmness to prevent their dropping out, yet, they can easily be removed with the special needle which I have designed for the administration o fthe vaccine prepared at this laboratory or in fact with any vaccine which is dried on a braided filament. The package is perfectly aseptic and is sealed at the laboratory when the vaccine is placed in it. In vaccinating the use of the special needle obviates the necessity of touching the impregnated threads with the fingers,

or in fact, with anything but the needle, thus reducing to the minimum, the liability to contamination with foreign bacteria, dirt, &c., features which are not possessed by any other method in the administration of similar vaccine.

To protect this package and the needle for the administration of the vaccine, the necessary steps have been taken to have it patented in Canada, and it is my intention to assign the same to the Crown that the device may be preserved for the benefit of the live stock interests of the country.

The circular which accompanies the vaccinating outfit, which outfit can be used for either the anthrax or black-leg vaccines, is as follows:—

"DOMINION OF CANADA.

Department of Agriculture—Health of Animals Branch.

BIOLOGICAL LABORATORY.

Vaccinating Outfit for the Administration of Anthrax and Black-Leg Vaccines.

The Anthrax and Black-Leg Vaccines prepared at the Biological Laboratory are dried on Braided Silk Threads and require a special instrument for their administration.

The outfit consists of a handle and two inoculating needles. The handle of wood is hollow and the needles are placed in this recess for protection during shipment, and when they are not in actual use. The needle is of special construction with a bayonet point and a small hook about one half inch from the sharp end.

Method of Vaccination.

The Needle may be dipped in Alcohol before Vaccination and allowed to thoroughly dry before engaging a Thread of Vaccine. If disinfectants such as Carbolic Acid or Creolin are used on the needle, the Virus on the thread will be destroyed, in consequence of which the vaccination will be of no protective value to the animal.

The needle is placed in the holder, the ferule is screwed down tight to securely hold the needle and the outfit is ready for use. The stopper of the vaccine container—to which the vaccine is attached by means of a spring clip—is removed from the vial and reversed. The fine hook of the needle is passed through the braiding of the silk and by a slight pressure away from the spring clip, the thread of vaccine is removed from the clip and remains on the hook of the needle. With the thread of vaccine on the hook of the needle, the site of inoculation on the animal having been properly prepared, the skin is grasped with the free hand and the needle carrying the thread is forced under the skin parallel to the body of the patient. When the thread is lost from sight the needle is removed, leaving the vaccine beneath the skin and the process of vaccination is complete.

The price of the Vaccinating Outfit is fifty cents.

The price of Vaccinating Needles separate from the handle, is twenty-five cents for two.

The price of Anthrax Vaccine is five cents per dose.

The price of Black-Leg Vaccine is five cents per dose.

Vaccinating outfits and vaccines may be obtained by applying to the Veterinary Director General, Ottawa, Canada."

ANTHRAX VACCINES.

There have been disbursed from the laboratory during the year just ended, as directed by your office, 483 doses of each of the first and second vaccines. A detailed monthly statement is as follows:—

	1907-8.
April	239
May	17
June	..
July	98
August	77
September	5
October	15
November	..
December	32
January	..
February	..
March	..
Total	483

In all instances these vaccines have been supplied in hermetically sealed tubes, the vaccine being a liquid culture of properly attenuated anthrax germs. Owing to the excessive amount of labour required in the preparation of the vaccine and the danger of improper handling by individuals using it, I conducted a series of experiments to determine the feasibility of drying this vaccine on specially prepared braided silk filaments. The experiments were satisfactory, and we were able to immunize sheep and calves against virulent anthrax, which killed control sheep in 52 hours. As there is less danger connected with the preparation, disbursing, shipping and use of dried vaccine, than is the case with the liquid vaccine, I have, with your approval, prepared sufficient vaccine for the demands of the year. The package used is similar to that in which we place our black-leg vaccine, with the difference that an amber vial is used as a container and the first vaccine bears a yellow label and seal, while the second vaccine has a green label and seal.

I believe that this preparation of dried anthrax vaccine is the first instance in which it has been prepared in this manner, and it is very gratifying to note that at least one commercial house is at present investigating and seriously considering the advisability of preparing their output in a similar manner.

The instrument for the administration of this vaccine is the same as for the administration of black-leg vaccine.

The following is a reprint of the circular which accompanies all disbursements of anthrax vaccine:—

"*Dominion of Canada—Department of Agriculture—Health of Animals Branch—Biological Laboratory.*

Anthrax Vaccine.

Anthrax vaccines properly used, afford protection or immunity to a subsequent artificial or natural anthrax infection. The vaccines for protecting against anthrax prepared at this laboratory are dried on braided silk threads and these braided silk threads are held by a special spring clip to the stopper of their sterile container. Anthrax vaccines are attenuated or weakened cultures of the germ causing anthrax (baeillus anthracis). The process of attenuating or reducing the strength of the germ is confined to the laboratory and cannot with safety be conducted elsewhere.

To protect or immunize an animal against anthrax, two vaccines are required and protection or immunity is the result of the animal passing through two mild, properly graded attacks of the disease, which, as a rule, cause no inconvenience to the patient save a slight elevation in temperature. During these two mild attacks of the disease it is advisable to take particular care of the animals, protecting them from inclement weather, extremes of heat or cold, &c.

The first anthrax vaccine (yellow label), is a very weak virus and is only intended to protect against a subsequent administration, after the proper interval, (twelve days), of the second anthrax vaccine, (green label), which is a very much stronger virus and this in turn protects against virulent anthrax. Protection or immunity against anthrax is established in from twelve to twenty days after the administration of the second vaccine. During this interval, from the administration of the first vaccine until immunity is established in the vaccinated animals, they should be kept from grazing on infected pastures and no hay from infected lands should be used for feeding.

Vaccine used on an animal already affected with anthrax will not protect such an animal, nor will it prevent its death. The use of anthrax vaccine, during or immediately after the occurrence of an outbreak of anthrax, may be followed by death, in some instances due to the stimulation of the anthrax germs already in the system of the animal and such accidents cannot be prevented. In the use of anthrax vaccine it is well to take the temperature of the animal to be vaccinated immediately before inoculating and in the event of the temperature being elevated, vaccination should be deferred until the temperature of the animal is again normal.

Method of Vaccination.

By using the vaccine prepared at the Biological laboratory, together with the vaccinating outfit supplied by the department, the method of introducing the vaccine beneath the skin of the animal is very simple. (See circular with vaccinating outfit). The site of inoculation should be prepared by clipping away the hair and washing with alcohol or boiled water.

With the needle properly placed in the needle holder and the braided silk thread of impregnated vaccine on the needle, a fold of skin is grasped with the left hand while the right forces the needle carrying the braided silk through the skin until the silk is lost to sight when the needle is immediately withdrawn and the impregnated silk is left behind.

The most convenient points for inoculating are, the side of the neck in horses, behind the shoulder in cattle and behind the shoulder or the inside of the thigh in sheep. Any point where the thread can be introduced beneath the skin into the cellular tissue of the animal to be vaccinated is suitable.

Each thread of vaccine constitutes a single dose for the horse, cow, sheep and hog.

In the manufacture of anthrax vaccines at the Biological Laboratory, every possible precaution in their preparation and subsequent testing is taken, but the department can assume no responsibility for untoward effects following their use.

The price of anthrax vaccine is 5 cents per dose, a dose consisting of a thread each, of the first and second vaccines.

The price of the vaccinating outfit is 50 cents.

Anthrax vaccines and vaccinating outfits may be procured by applying to the Veterinary Director General, Ottawa, Canada."

While I have endeavoured to outline the various phases of our work and to describe certain special features which are of more than passing interest, there are many details connected with all of the work of the laboratory, which, if mentioned, would be uninteresting and add little of general value to my remarks on the various subjects which have been treated.

The greatest need of the laboratory at the present time is additional assistance which will afford a relief from the routine, thus enabling the devotion of a portion of the time to original research that we may more intelligently understand some of the peculiar phases manifested by some of the contagious diseases of animals.

Without further remarks, I desire to acknowledge the great appreciation which you have manifested in the work of the laboratory, and also the interest taken from time to time in the development of its varied features.

I have the honour to be, sir,
Your obedient servant,

CHAS. H. HIGGINS,
Pathologist.

The Veterinary Director General,
Ottawa.

W. H. PETHICK, V.S.

GOVERNMENT EXPERIMENT STATION.
ANTIGONISH, N.S., March 31, 1908.

SIR,—I have the honour to submit a report of experiments conducted under your direction at this station particularly, of such as were completed recently. As this report may possibly be read by others, I beg liberty to make a few general remarks, which otherwise would be unnecessary.

Since the distribution of your special report, in which it is clearly shown that ragwort is the cause of Pictou cattle disease, renewed interest is taken in the matter, and farmers and others now realize that if cattle-raising is to be conducted with safety and profit, that ragwort must be exterminated. This may be accomplished without great difficulty on tillable land by a short rotation of crops and the usual weed-destroying implements. But the firm foothold the plant has obtained on the hill-sides, rocky pastures, among stumps and on waste land, where it is practically impossible to use hoe, plough or scythe, and from whence the seed is carried by the wind and distributed freely, renders the task anything but an easy one.

The hope that sheep might prove of valuable assistance in the work, and no doubt the commendable desire to gain information of interest from a scientific standpoint, led you to conduct a series of experiments, which form the subject of this report.

It is true that these animals have long been known as free eaters of ragwort and a great help in keeping it in check. But it was just as generally believed that the weed was injurious to sheep. By some it was thought to cause sickness and death as in cattle. By others it was believed to produce staining of the tissues, making the mutton unmarketable, and as we recall the loss and discouragements which attended the raising of cattle on ragwort-infested farms, we are not surprised that unless these and other questions were satisfactorily settled, that the farmers within the weed area would hesitate to stock up with sheep and await with interest the result of our work here.

It will be noticed that these experiments were conducted not only with a view of settling the two important questions referred to, but also to test several popular theories regarding the season and stage of growth of the plant when the harm is supposed to be done.

The many callers at the station agree that the farm upon which these experiments were conducted was very suitable. On it thirty-six head of cattle had died of Pictou Cattle Disease. It is traversed from end to end by a stream of pure water. The north portion of about fifty acres, was practically weed free. The centre of the farm was under hay and contained considerable ragwort in places, while the field towards the south was literally covered with the plant. It will thus be readily seen that by a suit-

able arrangement of fences, we were able to confine sheep on weedy or weed free pasture as desired.

The experimental pens for winter feeding consisted of framed buildings well lighted and ventilated and divided into separate apartments, a door in each leading to separate paddocks enclosed by a suitable fence. Fresh running water was always within reach.

The sheep employed were the crosses usually met with in eastern Nova Scotia, long and short wooled breeds being about equally represented. All were marked 'E.R.' on the side and a plain figure gave the subdivision and pen to which the animals belonged, while other marks enabled us to decide as to the individual and rendered a mistaken identity impossible.

In order to avoid repetition when dealing with each experiment separately, I would state here that all our sheep suffered during December, 1905 and January, 1906, with contagious ophthalmia, and while nearly all made a rapid and complete recovery, a few aged ewes became much emaciated and died. Post mortem examinations showed that ragwort was in no way accountable. The places thus made vacant were filled by young sheep born on the premises.

We were most fortunate in meeting with very small loss by accident or ordinary causes.

Careful post mortem examinations were held on all animals dying from any cause and specimens forwarded to the biological laboratory for microscopic examination, thus removing any doubt that might exist, as to the cause of death.

EXPERIMENT NO. 1.

To ascertain the effect, if any, upon sheep of ragwort feeding during winter only (with dried plants), on December 1, 1905, ten healthy sheep were placed in a suitable pen at the new stable and fed three times daily upon ragwort hay such as is found upon cattle disease farms. Great care was taken to secure only such hay as contained an abundance of ragwort, and which, consequently, would be fatal to cattle, if fed thereon. All had good appetites and were particularly fond of ragwort. In fact they would pick it from among the common fodder plants, strip off the leaves and flowers refusing only the coarse stalks. Their health continued good. We thought, however, that the wool had lost some of its lustre. (It now seems that this condition was overrated).

On May 24, 1906, these sheep with their lambs were turned upon fifty acres of weed free pasture. The continued bright and healthy during summer and on December 1 were again placed on the winter ration previously described. Nothing unusual was noticed in their behaviour. Their appetite for ragwort continued good and when turned out on May 21, 1907, to their weed free pasture, had, if anything, a better appearance than during the preceding fall. They did as well during the summer as could be expected. (The season was unfavourable). All were slaughtered under my inspection between November 1 and December 3, 1907.

Ante-mortem examination.—All had the appearance of health. Numbers one and six, being old, were thin, the others were in good marketable condition.

Post-mortem examination.—The organs were normal in every case. Flesh of good colour and firm. The pathologist reports that he examined the specimens forwarded, and that all were normal.

Experiment No. 2.

To ascertain the effect, if any, upon sheep of ragwort feeding in summer only (while the plant was green), ten healthy sheep were kept from December 1, 1905, to May 24, 1906, in a suitable pen situate at a considerable distance from such as were

occupied by sheep receiving ragwort. The hay fed three times daily to this lot, was similar in kind and quality to that fed in the preceding experiment, except that in this instance all ragwort plants had been carefully removed. As might be expected, all wintered well, and on May 24, they were turned into a field containing thirty-five acres where ragwort was growing abundantly. They were noticed to eat freely of the plant and were particularly fond of the young succulent leaves. By fall, they had somewhat improved in condition. On December 21, they were again stabled and fed as formerly on weed free hay, and while not gaining much in flesh, remained quite thrifty. They were returned to their weedy pasture on May 16. As they had so reduced the ragwort another weedy field of sixteen acres was taken in. Here, they remained, apparently in perfect health until slaughtered between Novmber 15 and December 30, 1907.

Ante-mortem examination.—All bright and healthy. Three old sheep rather thin; remainder in good condition.

Port-mortem examination.—No evidence of disease. The pathologist reports all organs normal.

Experiment No. 3.

To ascertain the effect, if any, upon the health of sheep of ragwort feeding during the entire year, this lot of ten sheep were fed from December 1, 1905 to May 24, 1906 on ragwort hay, this being similar in every respect to that fed to pen No. 1. They were also kept with this lot (pen No. 1) at the new stable. These animals were also fond of the weed, eating it freely and thriving upon it. On May 24, they were turned to pasture on the weed infested land with pen No. 2. They gained somewhat in flesh during the summer and were penned again on December 1 and fed upon ragwort hay. Their health and appetite continued good. Their fondness for dry ragwort was very noticeable. On May 24, they were again turned to pasture on ragwort land, where they remained until slaughtered between November 15 and December 30, 1907.

Ante-mortem examination.—All apparently healthy. Two old ewes and one wether thin. The remainder in good flesh.

Post-mortem examination.—All organs healthy. Flesh normal in colour and firm. Pathologist reports no evidence of disease in specimens forwarded.

Experiment No. 4.

The opinion prevailed in certain sections that fat adult sheep only are susceptible to the injurious properties of ragwort. The following experiment, will, therefore, be interesting.

Four healthy well fed wethers reached the station on February 3, 1905, and were at once placed in a suitable pen not previously occupied. They were fed three times daily upon native hay, which contained a liberal admixture of ragwort. During the winter these animals were observed to eat freely of ragwort—in fact, seemed to prefer it to the ordinary hay. They continued in good health and condition. On May 24 they were sheared and turned into a four-acre field where ragwort was growing abundantly. By fall they had almost exterminated the plant. On December 1 they were returned to the pen and fed on very weedy hay until May 24, when they were again turned upon weed-infested land. Here they remained all summer, eating the ragwort with relish and without injury to themselves. On December 2 they were penned and fed as during the two preceding winters. We observed in January that the two older animals were losing flesh, and, although showing unmistakable evidence of old age, were bright and healthy. On May 26 they were again turned into weedy pasture, where they remained until slaughtered between November 24 and December 30, 1907.

Ante-mortem examination.—All bright and apparently healthy. Nos. 1 and 3 rather thin; 2 and 4 fat.

Post-mortem examination.—All organs appeared normal. Flesh good colour and firm. Specimens of liver, spleen, kidney and lymph glands were examined by the pathologist, who reports that he finds no evidence of disease.

Experiment No. 5.

In order to control the preceding experiments, ten healthy sheep were fed during the winters of 1905-6, 1906-7, with pen No. 2 receiving the same kind and quality of hay, which, as it will be remembered, was absolutely free from ragwort. During the summers of 1906 and 1907, they were pastured with pen No. 1 on weed free land. Care was taken that these animals should not eat ragwort in any form. As might be expected, all remained healthy. They were slaughtered between November 16 and December 30, 1907.

Ante-mortem examination.—Three aged ewes rather thin. Remainder in good marketable condition.

Post-mortem examination revealed no evidence of disease. This was confirmed by the pathologist's report.

It is both interesting and significant that careful ante-mortem and post-mortem examinations failed to show any material difference between this lot and such as had lived more or less constantly upon ragwort. As this is a most important point, and in order that we might have the opinion of an expert and recognized authority, I requested Mr. A. G. Bailey, sheep buyer for the Maxwell Meat Company, a branch of Swift & Company, of Chicago, to compare the different subdivisions of pens, judging them from the standpoint of health and condition. The following is a copy of his letter:—

Antigonish, N.S., Nov. 4, 1907.

'I have to-day visited the government experiment station at Cloverdale, and have looked over the sheep employed in the various experiments held there, with the view of ascertaining whether or not the continued feeding on ragwort, would produce sickness or death in these animals or in any way effect their value for market.

"Taking the flock as a whole, I would say that while a few sheep show unmistakable evidence of being old, all are strong and thrifty and none have the appearance of being sick.

'After judging the five experimental subdivisions and comparing each of these with a pen of ten sheep which have been kept altogether upon a weed-free ration, I cannot see that the ragwort has had any injurious effect upon their health, appearance or condition.

'(Sgd.) E. G. BAILEY,
'Swift Company, Chicago.'

Experiment No. 6.

The supposition that the ragwort seeds might be more potent than the leaves and flowering tops, led to the following test.

A quantity of ragwort cut while the plant was bearing ripe seed was mixed with an equal quantity of fine native hay which in addition to affording nourishment would hold such seeds as might shake out from the heads while feeding. Three healthy sheep, which had eaten ragwort during summer, three healthy sheep which had never eaten ragwort and three lambs from weed free pasture, were fed for forty-one days (December 1, 1906, to January 10, 1907) on the mixture mentioned above. They were observed to eat the seed heads and leaves of the ragwort with as much relish as they did the true grasses. No ill effects were observed, except a gradual loss of flesh, a condition which was fully expected in consequence of the bleached and innutritious ration. On January 10 our supply of seed heads was exhausted and the

animals were then fed on ordinary ragwort hay. They were slaughtered between November 20 and December 30, 1907.

Ante-mortem examination.—All bright and healthy. The shearlings were in good condition; four aged sheep very thin. Two sheep in good condition.

Post-mortem examination.—All organs appeared healthy. Flesh of normal colour. Pathologist reports no evidence of disease.

Experiment No. 7.

To ascertain whether or not feeding upon ragwort causes staining of the flesh, and if so, at what stage does the discolouration begin. On June 17, 1905, five ewes with their lambs procured from outside the weed area were put in very weedy pasture. On August 1, lamb No. 1, was killed. Flesh normal. On September 1, lamb No. 2 was killed. Flesh normal. On November 1, lamb No. 3 was killed. Flesh normal. On December 1 the survivors were stabled and fed upon hay, which contained a large proportion of ragwort. On December 6, ewe No. 1, died (from accident). Flesh normal. On January 1, 1906, ewe No. 2 was killed. Flesh normal. March 19, ewe No. 3 was killed. Flesh normal. On April 20, ewe No. 4 was killed. Flesh normal. On July 14, ewe No. 5 was killed. Flesh normal.

It seems in place to state here that eleven lambs born in the early spring of 1906 were pastured on ragwort infested land, and when slaughtered for market during September were found to be in good condition and the flesh of normal colour. Regarding this phase of the subject, I would also say that Mr. E. G. Bailey, who has this summer purchased over three thousand lambs in Antigonish and Pictou counties, informs me that he has not heard a word of complaint from his butchers regarding the colour of the flesh, and when we realize that at least fifteen hundred of these lambs had pastured on ragwort infested land, it is at least significant, and confirms our opinion that lambs may be pastured on ragwort without depreciating their value for market.

There are unfortunately certain places throughout the weed area where conditions are particularly favourable to the vigorous growth of ragwort, such as amongst stumps in burnt land. In such places the hoe and scythe cannot be used to advantage. Pulling the weed up by hand seems an endless task, and one not readily undertaken by our farmers. Consequently, the weed grows in such places undisturbed, and year after year the seed is distributed by the wind over the surrounding fields. Therefore, the following experiment, conducted with a view of learning what dependence could be placed in sheep, under such conditions, is of much practical importance.

On May 25, 1907, I leased by your direction 110 acres of weed-infested land of the character above indicated. Sixty sheep were turned in as early as possible, but as there was some unavoidable delay in securing suitable animals, the ragwort plants had gained quite a start, and for a time we were very doubtful as to the outcome. By July 10 we were satisfied that the sheep had the mastery. In August, only a close observer would notice any ragwort. At no time did the sheep allow a plant within their reach to bloom. A few plants growing out of brush piles, and which the animals could not reach, were pulled by hand. Otherwise, the sheep cleared off this land unaided.

It is true that many plants will come again, both from root and from seed that may blow during winter. But the fact that sheep will reclaim the most weedy land has been clearly demonstrated, and to the satisfaction of many visitors who agree that this is a most valuable object lesson, settling as it does a point upon which there was much doubt.

As to the health of the animals engaged in this experiment, none had the appearance at any time of being sick. An aged ewe died on June 21 from accident; otherwise we had no loss. All the sheep have now been slaughtered under my inspection.

The flesh was of good colour (no yellow carcasses). All organs were healthy to the naked eye. The pathologist reports that he found no evidence of ragwort disease in the specimens, which I forwarded to him from each animal.

The result of our experiments prove clearly that sheep may be employed without risk in the extermination of this plant. We would not, however, be warranted in assuming that these animals are absolutely immune to the effect of ragwort under all conditions, for we occasionally have reports of a few sheep dying upon certain farms, presumably from ragwort poisoning. Several theories are advanced as accounting for these deaths, which I may say occur during fall and early winter. First, that the frost causes some chemical change in the juices of the plant. Second, that the snow covers up the low-growing fodder plants and the sheep are compelled to subsist entirely upon the more hardy ragwort. Third, that the ragwort is not in any way accountable.

In the absence of experimental proof, I am inclined to favour the second theory as most reasonable, and as the preventive measures which will naturally present themselves will apply alike to all, I would advise that sheep be removed from ragwort-infested lands before the hard frosts set in or the snow covers up the true grasses. It certainly can do no good, but only harm to keep sheep out at pasture as late in the fall as is the practice on certain farms.

Our experiments with sheep as ragwort destroyers is certainly most encouraging. In this particular, they have exceeded our expectations. Our farm, once so weedy, and which for many years bore the undesirable distinction of 'a cattle disease farm,' is now weed free, and one upon which cattle-raising may be engaged in with safety and profit. And while this favourable change was brought about through the agency of sheep (and what they have done for us they will do for others); it must, however, be remembered that the experimental flock, which allowed one sheep for about two acres, was much larger than is usually pastured on the same acreage throughout the weed area. And while we admit that the influence of a few sheep will be noticed over a considerable tract of land, yet too much must not be expected from a small flock over a large territory.

The area of Antigonish county is 355,850 acres, while the number of sheep thereon is estimated at 24,886 (only one sheep to fourteen acres). It is scarcely necessary to say that the number is far too small to cope successfully with ragwort, particularly where it has a strong foothold.

It is generally admitted that the extermination of ragwort will increase the value of farms so reclaimed from twenty-five to seventy-five per cent, and, the fact that sheep will do the work effectively, should in itself be sufficient inducement to stock the land much more heavily with these animals. But, apart from the ragwort question, I cannot see why the flocks in eastern Nova Scotia, should not be greatly increased with profit, for it is difficult to imagine a country possessing more natural advantages for successful sheep raising.

Experiments with Goats.

(Extending over a period of two years).

Numbers one and two were fed during winter upon weed free hay and pastured on ragwort infested land.

Numbers three and four were fed upon ragwort hay and pastured on weed free land.

Numbers five and six were fed upon ragwort hay and pastured on ragwort infested land.

Numbers seven and eight were kept upon a weed free diet and controlled the experiment.

Towards the close of this experiment, numbers one and two were killed by accident. The others were slaughtered, under my inspection, on January 28, 1908. Post mortem examination gave no evidence of disease in any of the eight. The pathologist has found all organs healthy.

The results of our observations will not warrant us in recommending these animals as ragwort destroyers. In this particular they do not compare at all favourably with sheep. It is true that they seem able to eat the plant with impunity and remain perfectly healthy throughout the entire test. But they are small eaters of ragwort and very much prefer to feed upon browse. Strange to say, those of the common variety are more destructive to this weed, than are the Angoras.

You will be pleased to learn that the suggestions we have been able to offer from time to time as a result of our experimental work have been well received and acted upon with the result that cases of Pictou cattle disease are now few, as compared with former years. The majority of our farmers are, I believe, making an honest effort to exterminate the plant, and now, with the aid of sheep, they should certainly succeed. But this cannot be accomplished at once, so while the good work is going on it is important to know whether or not native hay, from which the ragwort plants have been removed as thoroughly as possible, may be fed with safety to cattle. The following experiment answers the question affirmatively.

Three healthy young cattle were fed twice daily from November 1, 1905 to May 30, 1906, on native hay, from which the ragwort had been removed as thoroughly as possible after the mowing machine. On May 30, they were turned to pasture till October 30, when they were stabled and fed as during the preceding winter. On June 1, 1907, they were again at pasture, where they remained all summer. These animals continued in perfect health during the entire test and when slaughtered in the fall, were in excellent condition. All organs were normal to the naked eye. The pathologist found no lesions of Pictou cattle disease in the specimens forwarded from each animal.

An experiment covering the same period in which three healthy young cattle were fed upon hay of the same kind, in fact part of the same field. But in this case, no attention was paid to the ragwort, which was permitted to go into the mow with the hay. These animals were also at pasture during the summer season. On July 16, 1906, animal number one died of Pictou Cattle Disease. On February 8, 1908, numbers two and three were slaughtered. These animals were rather thin. Microscopic examinations of the liver revealed characteristic lesions of Pictou Cattle Disease.

The foregoing experiments show clearly, that if ordinary care is exercised in removing the ragwort plants, then native hay may be fed to cattle without risk, while neglect or carelessness in picking the weed, will be surely followed by fatal results.

EXPERIMENTS WITH HORSES.

For many years, a peculiar and fatal disease affecting horses has been reported from the ragwort area, both in Nova Scotia and Prince Edward Island. Public opinion and circumstantial evidence pointed strongly to ragwort as the cause.

On January 1, 1906, I purchased, with your authority, a mare eight years old, which though disabled and of little value, was in good health. She was at once placed in a comfortable box stall and bedded with sawdust. Her constant ration consisted of dried ragwort chopped fine and mixed with a small quantity of native hay. Her appetite was good and during the first six weeks, she improved a little in condition. On June 1, 1906, she was turned to pasture, where she remained until October 5, when she was again stabled and fed as before stated. No change was noticed in her condition or behaviour until June 1, when she became uneasy. Her temperature, hitherto about one hundred and one, reached one hundred and three, with little change for

some days. She now began to fail and look unthrifty. On June 23 her temperature fell suddenly to one hundred. Her appetite remained good until July 1, when it became variable and somewhat depraved. She was now losing flesh rapidly. At times she was dull then exeitable. Pulse fast and hard; temperature and respiration about normal; bowels eonstipated.

As the symptoms beeame more violent she was, on July 6, turned into a small field, where she wandered aimlessly about, exhibiting eertain symptoms, whieh I eonsidered to be eharaeteristic of the disease. The visible mucous membranes were pale, slightly yellow. The museles, particularly of the faee and neck seem rather rigid. Slight dropsieal swelling in legs and belly. Oeeasionally seems in slight pain. Urine seanty and voided often. Walks with unsteady gait and if interrupted or turned sharply around would stagger and even fall. When standing quietly, the ears are kept alternately in motion, and a peeuliar stamping with one hind foot (usually the left) is very eharacteristie. The foot is drawn up elose to the body and returned to the ground with considerable violenee. This aetion is usually repeated every three or four minutes. Temperature remained fairly normal, but respiration is laboured. Pulse quick and intermittent. All the symptoms beeame daily more aggravated. The dropsical swelling inereased, appetite entirely gone. There was grinding of the teeth and an eseape of stieky saliva from the mouth. After July 18 she was entirely indifferent to her surroundings; paid no attention to flies, but would stand for hours with her head pressed against a fenee or other firm object. She died on July 22, being eighteen months and twenty-two days from beginning of experiment and fifty-two days from first symptom of sickness.

An autopsy was held immediately after death. Lungs and pleura normal. Perieardium eontains about three ounces fluid. The abdominal eavity contains about three quarts dropsieal effusion. The fat wherever situated, was soft and yellow. The mesenterie lymph glands are enlarged. The stomach and intestines show no change of importanee. Kidneys are dark. Spleen slightly enlarged and soft. Liver normal in size and hard and showed morbid changes to the naked eye. Other organs and glands appear fairly normal.

Speeimens from the liver, spleen, kidney and lymph glands together with pipettes and smearings from each were forwarded to the laboratory.

As you have the pathologist's report on the subject, further eomment by me is unealled for, except to admit the uncertainty regarding the true nature of the disease, which Dr. Higgins finds is not hepatie cirrhosis and is, eonsequently, a different disease to that produced in cattle by ragwort feeding.

While I do not wish to attaeh too mueh importanee to the result of a single experiment, yet, when confirmed by eareful observation of outside cases, I submit that the result is, at least, definite enough to carry conviction and to throw the strongest suspieion upon ragwort as being at the bottom of the trouble.

During the past season, I have inspected all shipments of live stoek at the ports of Bayfield and Mulgrave. You will have notieed by my monthly reports that eight hundred and eighty-seven (887) eattle, thirty-two (32) horses, two hundred and eighty-four (284) sheep and one pig were shipped from Mulgrave, and one hundred and forty eight (148) cattle, seventeen (17) horses and thirty seven (37) sheep from Bayfield to St. Johns, Newfoundland.

In accordance with your instructions, I have from time to time visited different points in this Provinee, as well as in New Brunswiek and Prince Edward Island, and am glad to state that the health of farm animals, during the past year, has been excellent. No eontagious disease was discovered, although about the usual number of suspected eases, were reported and promptly investigated, of which I have given full partieulars in my special reports, which were duly forwarded to you.

In addition to my regular work, I have attended and taken part at a number of Farmers Meetings, as well as at the Short Course at the Agricultural College, Truro, N.S. and at the Dairy School at Sussex, N.B.

I have the honour to be, sir,
Your obedient servant.

W. H. PETHICK,
Inspector.

The Veterinary Director General,
Ottawa.

DEPARTMENT OF AGRICULTURE, ANIMALS QUARANTINE STATION.

Box 477, Lethbridge, Alberta, March 31, 1908.

Sir,—I have the honour to submit herewith the Annual Report of the Quarantine Station, Lethbridge, Alberta, for the year ending March 31, 1908.

The main work of the station has been an investigation into the disease of horses known as Dourine or Maladie du Coit. A fully detailed report under date of November 15, 1907, has recently been submitted to you, and I will therefore only briefly mention the results of the investigation, and the aim of the experimental work now in progress.

In the first place the identity of the disease has been fully established by the frequent finding of the infective agent, namely, the *trypanosoma equiperdum,* in affected mares, and, subsequently, by producing the disease in healthy equines by inoculation of this parasite, and by again isolating the trypanosomes from typical lesions of dourine in these experimentally infected animals.

For the purpose of gaining information as to the duration under favourable circumstances, and the mortality or percentages of recovery from the disease, a number of infected animals are being held under close observation. Evidence is accumulating in support of the belief that the disease is an extremely chronic and insidious one. The fatality is higher in stallions than in mares, every infected stallion that has been admitted to the quarantine station having succumbed to the disease, whereas a number of mares have returned to a condition of apparently perfect health. However, in some cases, and after lengthy periods, there have occurred relapses, recoveries must therefore be considered with great suspicion. Under such conditions diagnosis is often an extremely difficult task. A careful study of certain cases that have been under almost daily observation for a period of twelve months, convinces me that there are times when it is quite impossible to diagnose the malady on clinical grounds, and yet, even at such times, the infective trypanosomata have been demonstrated, and the animal is capable of propagating the disease. Efforts are being made to prepare a serum for test purposes, to assist in diagnosing these 'latent' conditions. Lastly, the medicinal treatment of dourine-affected animals is being attempted, experiments which are only commencing, and in which very little can be said at present. One of the remedies being tried in the administration of Atozyl, a drug from which very encouraging results are being obtained in the treatment of trypanosomiasis or sleeping sickness in man, a disease which in many respects bears a striking resemblance to dourine in equines. Very interesting in this connection is the fact, recently brought forward by Prof. Koch, that human trypanosomiasis may be transmitted by coitus. Koch, who has treated some 2,000 cases says, 'We have in Atoyl the specific drug for trypanosomiasis, as we have in quinine that for malaria,' and that sleeping sickness may be cured by Atoxyl by a six months treatment. Sir Patrick Manson, however, points out that the limit of the duration of the infection in man is not yet

known, and that it certainly may run a course of three or four years. We have similar evidence as to the duration of dourine, so that even if Atoxyl is proved to be a valuable remedy, it could scarcely ever be economically applied in the latter disease, the prolonged and expensive course of treatment under quarantine conditions, that would be necessary, prohibiting its use save, possibly, in the case of an exceptionally valuable animal. But should Atoxyl prove to possess a preventive action, then it might be extensively employed for the protection of breeding studs in dourine-infected districts.

LOCO-DISEASE.

On October 27, 1907, a carload of thirteen animals, six bovines and seven equines, all suspected of loco-poisoning, and showing distinct evidence of a chronic disease, were shipped to this station for investigation. These animals had been collected in the Tennessee Coulee and Livingstone ranges, Western Alberta. The removal of these animals to a district where Loco-disease is unknown, and where they could be hand fed and well cared for, would, it was thought, result in recovery for at least some of them. Up to the present time seven of the thirteen have succumbed, three of the remainder have made a markedly downward progress and are apparently in the final stages, and the other three, all bovines, are in about the same condition as on arrival, and may ultimately recover. In the study of these cases an interesting fact has been brought to light, namely, the extensive infection in all cases examined with the parasite *Sarcocystis,* a sporozoan parasite invading the musculature in a manner somewhat resembling that of the more familiar spiral nematode *Trichina.* As pointed out in a detailed study in sarcosporidiae separately submitted to you, this infection occurs probably as a sequel, in these cases, to loco-weed poisoning, the latter condition is being further investigated and will be reported upon at a later date.It is a pleasure to acknowledge my indebtedness to Dr. M. V. Gallivan, who has, whenever time permitted rendered much assistance at autopsies, in field-work, etc.

I have the honour to be, sir,
Your obedient servant,

A. WATSON,

To the Veterinary Director General, Ottawa, Ont.

SPECIAL REPORT ON LOCO POISONING.

REGINA, Sask., October 5th, 1907.

SIR.—I have the honour herewith to submit my report in connection with my recent visit to the Porcupine Hills, Alberta, whither I proceeded in accordance with your instructions, to inquire into the reported serious losses among stock ranging in the Tennessee Coulee, Jack O'Neil Coulee, Beaver Creek, Meadow Creek, Willow Creek, and Livingstone districts, and also to select a number of suitable cases showing characteristics symptoms of the disease under consideration, for removal to the Quarantine Station, at Lethbridge, in order that the disease might be closely studied under favourable conditiions. I was fortunately able to arrange for Dr. Warnock to accompany me, and found that his knowledge of the various districts, and long experience with the prevailing conditions on the range, and also his close observance during the past few years, of the disease under investigation in its varied stages, was of the greatest possible assistance to me.

We proceeded first to the Tennessee Coulee district, where the losses in horses and cattle during recent years had evidently been the greatest, although the present season's mortality had not attained the high percentage of former ones.

The topographical lay of this district is one strongly conducive to healthy conditions, it is rolling in character, interspersed with numerous fast running streams, containing an abundance of clear water. The soil is of a light gravelly nature, and there are no depressions containing stagnant water, the natural fall of the country being well defined and continuous, making the sanitary aspect all that could be desired.

The vegetation, however, was not as prolific as in other districts visited, although the Loco Plant was very much in evidence everywhere and had been liberally eaten off wherever stock had access.

In the vicinity of Summerview we found on one premises four horses and five young cattle affected. The owner had only resided in the district three years, having come direct from Manitoba, bringing his stock with him. The year following his arrival some of his animals commenced exhibiting nervous symptoms, which gradually increased. His work horses, previously fearless, began to fight the halter and finally refused to have their heads handled, followed by apparent defective vision. Their gait attracted attention, upon coming to a small object in their path they would step unusually high, or endeavour to jump over it. The appearance of their eyes became unnatural, assuming a wild distant glare. One mare tied in her stall was found dead in the morning, after having battered the wall in front of her up to the ceiling with her front feet in an endeavour to climb up, and falling over the partition, which gave way, injured herself fatally.

At the time of our visit one two year old and one three year old colt were in an unthrifty condition, a portion of their winter coats were still visible, they were dull, sleepy, presenting a condition of malaise when undisturbed. Upon being approached they would trot away a short distance, with heads carried semi-erect, exhibiting a stilty, jerky, and uncertain gait. A lachrymal discharge was noticeable in both animals, which appeared to be simply an increased flow of that fluid. These colts were showing the same symptoms last summer, they were kept in during the winter and well fed, resulting in a marked improvement. Upon being turned out, however, the symptoms reappeared with increased severity in the course of five or six weeks.

Two mares, one seventeen, the other fourteen years, brought from Manitoba, after being in the district one year commenced to act strangely, exhibiting nervous movements, were unable to back, or did so with great difficulty. The symptoms disappeared to a certain extent during the winter months but returned during July and August, after the mares had been on pasture for a short time. At the date of our visit they were in very fair condition, lachrymation marked in both animals, salivation apparent, but not profuse, they moved in a slow careless manner and presented a similar appearance of the eyes as the colts above-mentioned. These mares were being worked with caution, the owner keeping them off the pasture as much as possible. Their condition, however, would suggest that if the exciting cause could be eliminated a complete recovery would be probable.

Four two year old heifers, one three year old, were also affected. Three of these appeared dull, while the other two were excitable, erratic, and nervous. They were all very much stunted, and in an unthrifty condition, showing decided lachrymation and salivation, prehension appeared difficult, grazing being accomplished in a slow grubbing manner, accompanied by marked rigors of the muscles of the head, neck and forequarters. Upon being approached suddenly they would trot away for a short distance, all exhibiting the same typical outline, the head carried semi-erect, arched spine, very similar to opisthotonos, while their gait was of a jerky, stumbling and uncertain nature. One of these animals presented a marked swelling in the submaxillary space, accompanied by a thickening of the inferior maxilla.

A stallion, kept for breeding purposes, does not show any symptoms of this disease, although he is continually coming in contact with affected animals, being also stabled with them. He has not, however, at any time been out on pasture .

We found the loco plant growing plentifully on all sides and elicited the information that the owner had never seen a disease similar to the one affecting his stock before coming to this district. In his experience the stabling of affected animals resulted in the majority of cases in a decided abatement of the symptoms.

Proceeding along this coulee the loco-weed could be easily detected on all sides, noticing a live animal in the distance we drove up to it and found a two year old colt in an unthrifty condition, and of a dejected appearance. He gazed at us in a semi-crazed manner for a few moments, then suddenly trotted away exhibiting a similar gait to the other colts we had seen.

In conversation with an old resident we learned that he had been compelled to reduce his breeding stud, owing to the mortality he had experienced in his young stock, ranging from one to two years. He had resided in the district for twenty-five years but had not noticed this disease until six years ago, since when he had lost a very large percentage of his young stock, evidently from the same cause, as the symptoms and progress of the disease appeared in all of his cases to be similar. During the last winter this gentleman had stabled a number of his affected colts, with a resulting improvement in their condition when turned out in the spring. After a few months on the range, however, they rapidly fell back to their former condition. One ten year old mare with colt at foot died a few weeks ago, with identical symptoms of the disease affecting his younger animals. The colt which was being specially cared for by his neighbour, was presenting a very unthrifty appearance, he was sleepy, dull and erratic, and moved along in a slow careless and unsteady manner. Lachrymation was well marked, while a slight flow of saliva was dribbling from his mouth.

A stray mare showing characteristic symptoms, although not far advanced, was noticed among this man's horses. He has now only 80 head, and has lost during the past season 27 colts, aged from one to three years. The location of his premises are excellent, the water supply abundant, obtained from rapid running streams, while the drainage and sanitary outlook appear perfect. The soil is of a light gravelly nature, and the loco plant well distributed over the range.

Upon visiting another premises we found the owner had recently lost one mare, which had exhibited symptoms similar to those already described. He had also at the time of our visit one colt and one six-year old cow affected with this disease. We had not, however, the opportunity of seeing these animals, as they were out on the range, and approaching darkness preventing the possibility of finding them in sufficient time for examination purposes. The owner had not lost many animals during the last two seasons, but had been a heavy loser four of five years ago. He had found that affected stock improved in condition and that the symptoms abated when housed and fed, but that they returned again some weeks after the animals were let out on the range. In his experience young stock were most susceptible and cattle were affected almost as readily as horses, the symptoms appearing most pronounced during the months of July and August.

We proceeded to the premises of another resident in this vicinity and were informed by the owner that they had lost seven horses during the last few years, which they attributed to the disease prevalent on the range. They have never engaged in stock raising extensively, having given their attention to farming. One of their work mares was still showing some of the peculiar symptoms, although she had been stabled for some time and given careful attention. This animal at the time of purchase by her present owners had been been working in a neighbouring town, and was gentle and fearless. After being out on the range, however, for a short time she developed pronounced nervous symptoms, and when first taken in could only be handled with considerable difficulty. She was at the time of our visit in good condition and appeared to be in perfect health while standing undisturbed. Upon being turned loose in the corral with the halter rope hanging, she immediately began to tremble, fixed her eyes upon it and became quite excited, and while endeavouring to

get away from it exhibited the same gait previously observed in other affected animals, but not to such a marked degree. We found no cattle on these premises but the owner stated that a neighbour had lost about forty head a few years ago, and that owing to continued losses was obliged to dispose of his remaining stock.

Upon arriving at the last premises visited along this coulee we found that the owner had lost fifty horses, and a number of cattle during the last few years, all of which exhibited similar symptoms before death. These animals had been grazing on a portion of the range where the soil was of a light nature. He removed his remaining animals, having detected that they were developing symptoms of a similar nature, to another portion of the range, where the soil was heavier and the loco plant not so abundant, with the result that the mortality among them was reduced considerably and the survivors have improved. His experience with this disease was that affected animals did not develop naturally, appeared to lose their senses, saw imperfectly, ran into fences constantly, remained in an unthrifty condition, and when nearing death would wander about in a circle, finally fall and die after a few convulsive kicks. A stallion owned by this gentleman, and kept constantly stabled on his premises, is quite healthy, and has not shown any symptoms at any time similar to those noticed in his other animals on the range. A number of his affected stock have been stabled each winter, and have shown marked improvement in the spring, upon being turned out, but a few weeks on the range have been sufficient to produce a return of the symptoms, which appear to become more pronounced during the midsummer months. One young mare showing decided symptoms last fall has been kept off the range, stabled and fed constantly since, which has resulted in a marked abatement of the symptoms. At the time of our visit it was with difficulty that anything abnormal could be detected. This animal had been visibly affected for two years.

Proceeding to Jack O'Neil Coulee we found on one premises two colts badly affected, the symptoms having developed a year ago. They were fed during the last winter on sheaf oats, and improved considerably, only, however, to return to their previous condition after a month on the range.

While in this vicinity we obtained the information that a resident a few years ago owned 400 head of cattle. After losing 150 of them, all of which developed similar symptoms, he disposed of the remaining apparently healthy animals and removed 80 affected one to the vicinity of Pincher Creek. These animals gradually improved and fattened, and were all finally sold for beef, not one of them dying after removal. They remained, however, small, undersized and stunted, no growth or development taking place.

A noticeable feature in this connection is the fact that no other animals became affected in the vicinity where these diseased animals were removed, although no precautions were taken, and they were allowed the freedom of the range. Dr. Warnock in his report on loco poisoning, two years ago, dealt fully with this outbreak, having had the opportunity of examining the animals and holding a few post-mortems.

A badly affected horse was shipped to Cranbrook, B.C., where he remained useless for two years, but gradually recovered and is working daily attached to a dray in that town.

Returning to the Tennessee Coulee in consultation with another resident we found that he had lost five horses during the last few years, after exhibiting similar symptoms to those described. They were brought in from Eastern Canada, two of them became visibly affected six weeks after arrival, dying a few weeks later, while the remaining three continued in an unthrifty and nervous state with erratic tendencies for eighteen months before succumbing. At the time of our visit a two year old was still showing some of the abnormal symptoms. This animal had been kept off the range for some time, and according to the owner's statement, with marked

beneficial results. This gentleman informed us that the eastern horses had always been perfectly gentle, until a short time after being turned out, when they became dull, moved sluggishly, attempted to jump, or step unusually high over the smallest objects, and finally refused to be haltered, or have their heads handled. If this was persisted in they would strike, or rear, and fall backwards. These animals rapidly became reduced and remained so, and it was found impossible to handle the three, which lived for eighteen months, at any time during their illness without considerable danger.

We next visited the Livingstone range district where we found conditions very similar to those already described. The soil, however, varies; along the hill slopes it is of a clay consistency, while it appears to change to a lighter nature in the bottoms of the flats. The loco weed, although quite noticeable on some portions of the pastures, does not appear to be as general, or as widely distributed, as on other parts visited. The same excellent sanitary conditions, however, prevail.

An old resident informed us that he first noticed the disease among his stock one year ago, and has since lost six yearling colts, the character of their illness being strongly suggestive of the same exciting cause. He had at the time of our visit two two-year old colts evidently affected with the disease under consideration. They commenced to develop symptoms as yearlings, and upon the advice of Dr. Warnock, he put them into a pasture, which included 25 acres of oat stubble and 25 acres of green fall wheat. The change appeared to benefit them, although they still maintained the peculiar gait, and did not regain their usual vigour.

The colts which succumbed to this disease had been running in the same pasture as those of his neighbour, none of whose stock, however, have so far become affected, neither have any symptoms been detected in 150 cattle grazing under the same conditions.

The only difference between the pasturing of this gentleman's colts and those of his neighbour was that the former's were turned out earlier in the spring.

Proceeding a few miles to another premises the owner informed us that this disease had never affected any of his animals. Another neighbour, however, lost three young cattle, three colts, and one mature horse, all of them exhibiting similar symptoms during their illness, which coincided with those of other animals already described.

On arriving at another premises we found that the owner had no animals affected although he had lost last winter four two-year old cattle and two two-year old colts, evidently from the same cause. This was his first experience with this disease, the animals developing symptoms during the summer of 1906, all of them dying upon the advent of cold weather. The soil in this vicinity is noticeably of a heavier nature than in the Tennessee coulee, and the loco plant, while in evidence, is not by any means abundant.

Upon proceeding farther up the Livingstone range we elicited the information from two stock owners, who were in partnership, that nine of their yearling colts began to act strangely a year ago, followed by unthriftiness. They became sluggish in their actions, erratic, and nervous, and finally developed a jerky stumbling gait. Five of them died this spring, while the remaining four were disposed of. They have not detected any cases among their cattle, although they have 300 head grazing on the range. The loco plant was in evidence, but to a very limited extent.

Proceding to a large range in this vicinity we interviewed the owner, who stated that they had lost a number of valuable colts this spring, some of them succumbing to attacks of Cerebro Spinal Meningitis, while others were the victims of Verminous Aneurisms. Two yearling colts, in which Aneurisms were suspected, were receiving special care and attention in the hospital corrals, their diet consisting of green feed and oats, while medicinally vermifuges were being administered daily. They were in a very fair condition, appeared dull, exhibited nervous symptoms on being approached, while their gait denoted inco-ordination to a certain extent.

The symptoms presented, although similar, were not as typical as the majority of cases witnessed in the other districts. These colts, however, were under far more favourable conditions, which would naturally have a mitigating effect upon the symptoms in a disease of a sub-acute nature.

After a drive of eight miles up the range we came to a special enclosed portion known as the calf pasture. The grass was very luxuriant, and the local sanitary conditions excellent, the latter features being all that could be desired on any part of the ranch visited by us. One three-year old colt and one two-year old were kept in this pasture, in addition to a number of other animals. They were suspected of being affected with Chronic Cerebro Spinal Meningitis. Their illness was ushered in with an attack of irregular strangles, but upon recovery from this malady nervous symptoms developed, accompanied by unthriftiness, great excitability upon being handled, finally becoming unmanageable. When trotting their gait was of a stilty, jerky character, one of them showing a stringhalt tendency. Lachrymation and salivation were not visible in these animals, although the other symptoms had many aspects similar to those noticed in affected stock in other districts. The owner stated that he had not experienced any unusual disease among his cattle, and that they had no cases of the diseases prevalent on the range in his herd. On returning along the range, however, we noticed a three year-old black steer, within the limits of the ranch, showing the characteristic symptoms observed in the affected cattle on the Tennessee Coulee. This animal was in a very unthrifty condition, arched back, exhibiting nervous symptoms when approached, careless, stumbling and erratic gait, wild glaring appearance of the eyes, lachrymation and salivation marked. It is therefore evident that the main disease does occur among the cattle on this ranch, although possibly not to a serious extent, otherwise the owner's attention would have been directed to it. In conversation with him regarding the strong suggestive features pointing to the loco plant, as the exciting cause of the mortality among stock in the districts visited, he was strongly inclined to believe that the plant in question was not of a poisonous nature, and that the conditions existing outside of this ranch were probably of a different nature to those found thereon.

Specimens obtained from two yearlings were shown us, consisting of Aneurisms of the Posterior Aorta, Anterior Mesenteric and Renal arteries, as also a section of a kidney containing sclerostomes. These were well marked cases, the thrombi formed, owing to the irritation of those parasites, almost occluding the arteries.

I am quite satisfied, however, from symptoms observed in the affected animals in the other districts visited, that the exciting cause is not a parasitic infection. Conditions resulting from the causative agent would naturably lower the resistance of the individual, and explain the seriousness of such parasitic infestations.

On the next premises visited we examined a three year old filly, which had been running on the range in the Tennessee Coulee district from a yearling, and developed abnormal symptoms during last winter. In the month of July the owner brought her to Macleod and has since given her the very best care and attention. At the time of our visit she was in very fair condition, a portion of her winter coat was still in evidence, there was a slight edematous swelling on the inferior portion of the abdomen, lachrymation and salivation quite visible, the glaring appearance of the eyes noticeable, while her gait was uncertain and erratic. Her demeanour was of a nervous excitable nature, and although her appetite was good she exhibited difficulty in prehension. A marked improvement had taken place since she was removed from the range, Dr. Warnock especially noticing the improvement since his last visit. The mother of the colt in question had also pastured in the same district but had not developed similar symptoms, neither have any of this gentleman's horses at Macleod, which have been in contact with this colt but have not been on the range, developed any symptoms of an abnormal nature.

Leaving this district we proceeded to Meadow Creek and on the first premises visited we found three yearlings and two two year old colts showing symptoms of the same disease, and learned that the owner had lost one three year old affected in the same manner. These colts, after having been wintered, were let out on to the range, the abnormal symptoms being first detected during the month of July last. At the time of our visit the two year olds were being kept in close proximity to the stables and were receiving special attention. They were in fair condition, showing signs of unthriftiness, slight lachrymation, and presented to a less marked degree the staring glare noticed in the eyes of other affected animals. They were dull and sleepy, changing to excitement upon being approached. Previously gentle, they were now difficult to handle, and moved in a careless stumbling manner. Although this gentleman has 100 head of cattle, he has not so far detected any abnormal symptoms among them.

We found the sanitary conditions excellent, the soil not as light in nature as in other districts coming under our observation, and the loco plant growing on the hillsides to a limited extent, appearing, however, to be smaller and of younger growth.

Calling upon another resident of this district we found that he had one two-year old and one yearling calf affected; they had presented peculiar symptoms shortly after weaning. While grazing, prehension appeared difficult, the animals nipping off the grass in a slow grubbing manner, this act being accompanied by rigors of the muscles of the head, neck, and forequarters. They were undersized, one in very fair condition, the other very unthrifty, the nervous condition apparent in other animals was almost lacking, while the gait was not at all characteristic. The owner informed us that he had lost eight two year-old cattle last fall, and that at the commencement of their illness the symptoms were similar to those exhibited by the animals at present affected. As the disease advanced they became very dull and sleepy, changing rapidly into an excitable state upon being approached. In some of them he noticed a swollen condition of the head, especially of the lower jaw. They developed a peculiar gait, which he could not describe, and fell frequently.

The loco plant is found growing in this district and is well distributed especially along the hillsides.

The last premises visited are divided by Willow Creek, a rapid flowing stream containing an abundance of clear water; the range running west terminates along the Porcupine Hills, while easterly it changes into a farming country. The loco weed grows profusely along the Porcupines, but has not yet been detected east of the creek. The owner informed us that he had lost sixty head of horses, as well as a number of cattle, during the last two seasons. He had not noticed this disease until they commenced to pasture their stock west of the creek. He has at the present time a number of colts and cattle affected, all exhibiting the following symptoms, varying in intensity, defective vision, unthriftiness, peculiar slow gait, lachrymation, salivation, and a wild glaring appearance of the eyes. The mortality among his stock has been largely due to the affected animals walking over the cliffs and falling into the creek below, thereby fatally injuring themselves.

One six year old cow was at the time of our visit, commencing to develop symptoms similar to those of his other affected stock, the wild glaring appearance of the eye was quite noticeable, her condition was not one denoting vigour, and her movements were sluggish, unless disturbed, when they changed to those of a quick, unsteady, jerky nature. The owner appeared very familiar with this disease and stated that in his experience all affected animals had ranged on the west side of the creek, and that he had never heard of stock developing similar symptoms that had not at some time grazed on the Porcupine slopes. He has also observed that animals turned out in the spring rarely developed abnormal conditions before the months of July and August, while those turned out during the month of July rapidly became visibly affected, frequently exhibiting symptoms of a more pronounced character than many of those grazing on the same pasture from early spring. He is endeavouring to keep

his animals on the eastern side, and is of the opinion that if he is successful his losses will be partially, or completely reduced. There is no doubt that the disease under consideration has caused considerable losses in the districts visited, and, as is generally the case, where a distinct malady predominates, has also been unjustly blamed for many fatalities resulting from ordinary ailments to which stock are heir. It would appear, however, from information gathered that there is a decided decrease in the number of affected animals during the present year. This can possibly be accounted for by the past unusually severe winter claiming is its victims a large percentage of affected animals, in preference to those whose constitutions had not been undermined.

The disease under consideration, however, from the constant similarity and uniformity of the symptoms observed by us, must necessarily under ordinary conditions be classed as a distinctive one, attributable to a definite exciting cause. The fact, however, that animals of all ages, including horses and cattle of varied constitutions, continually in contact with affected ones, kept under certain limitations, do not contract this disease under any circumstances, together with the endemic tendency of these outbreaks, constricted as they are to definite areas, makes the possibility of a contagium as the exciting cause most remote, and can therefore, I think, be safely eliminated from further serious attention.

Ever since this disease has been recognized, it has been a common practice for individuals living in districts where the malady was unknown, to purchase at nominal figures affected animals, removing them to such districts where they either recovered, or died, without in any instance establishing this disease, and extending the limits of the already defined area. There is no doubt that parasitic infestations do occur, a fact which has long been recognized, in prairie fed and range animals. Stock reared under such conditions are seldom found free from some of their species. It is difficult to conceive, however, how such disastrous results could be produced by them in a country where the existing conditions are totally at variance to their vitality, if such causes were deserving of serious consideration. Neither was the uniform chain of symptoms witnessed by us, in all affected animals, suggestive of abnormalities resulting from the invasion of such parasites. It would also be impossible to satisfactorily explain the phenomena persistently apparent when badly affected animals of both species are removed from certain limited districts and allowed their freedom on other portions of the range, or housed, and fed on ordinary fodders without any medicinal treatment.

A very striking feature noticed was the fact that the Loco weed was in evidence everywhere where affected animals had grazed, and that its growth was most profuse in districts where the greatest mortalities had occurred. The disease appeared to exist in proportion to the growth of this plant. In vicinities where the Loco weed was apparently of young growth and sparsely scattered the young colts appeared to be the only animals visibly affected, while in districts where this weed flourished abundantly mature animals of the equine and bovine species were exhibiting characteristic symptoms, with a serious percentage of mortalities. Unfortunately the grazing of sheep is prohibited on the range in the districts visited, and we were therefore unable to obtain any data regarding them. There is no doubt, however, that some animals, whether or not due to abnormal desires, do pick out and eat this plant, as was evidenced in several instances in pastures where the vegetation was of luxurious growth, and the weed very limited, the latter having been eaten off so systematically that it was with difficulty an undisturbed plant was found.

Hay cut in July or August on the range, containing the Loco weed in abundance and fed to stock in the winter months, has resulted in a number of the animals developing the same symptoms as those detected in stock grazing on the range, while those fed on cultivated fodders, or upon hay obtained where this weed has not been detected, do not become affected.

After carefully considering the evidence, the indications point most strongly to the cause of this malady being one of a dietetic origin. The symptoms produced in affected animals, accompanied by their tendency to fluctuate according to the choice of pastures, and fodders, denote the ingestion of a toxic principle contained therein, which apparently exerts its influence directly upon the nervous system, in ratio to the amount consumed and the regularity with which it is taken. The persistent presence of the loco plant, where the disease exist, and its total absence where this malady is unknown, together with its unfavourable history, point most strongly to this plant as being the exciting cause of the disease witnessed by us in the Tennessee Coulee, Jack O'Neil Coulee, Beaver Creek, Meadow Creek, Willow Creek and Livingstone districts, and which had been diagnosed by Dr. Warnock some years ago, along the Porcupine slopes, as loco poisoning, and reported upon by him.

The remedial treatment from present apearances resolves itself into one of removal, either of the plant, an apparently impossible task, or of the animals from the districts in which it flourishes. A number of affected animals were selected in accordance with your instructions for experimental purposes, and arrangements made for their collection and shipment to the Lethbridge Quarantine Station. A great deal of difficulty will, I am satisfied be experienced, however, in their removal. It is almost impossible to handle or drive them, due to their excitable tendencies and erratic nature. We fortunately secured the services of a man who had lost a large number of animals with this disease, and therefore one quite familiar with the peculiarities, to take charge of their collection and removal to Pincher Creek for shipment.

A list and description of each animal will be forwarded immediately they are shipped, as it is most probable a number of those selected will become unmanageable and their removal abandoned.

I have the honour to be, sir,
Your obedient servant,

GEORGE HILTON,
Inspector.

The Veterinary Director General,
Health of Animals Branch,
Ottawa., Ont.

T. BOWHILL, F.R.C.V.S.

VANCOUVER, March 31, 1908.

RED WATER INVESTIGATIONS IN BRITISH COLUMBIA.

SIR,—In my preliminary report forwarded December 9th, 1907, I drew your attention to the occurrence of a species of Piroplasma infection of the erythrocytes of the blood of animals suffering from the so-called Red Water disease, prevalent in certain portions of this Province. I also informed you of the discovery of some ticks belonging to the Genus Rhipicephalus some of the female ticks, obtained on that occasion are still alive and commenced ovipositing on the 18th of February, 1908.

I visited Chilliwack and Mount Lehman. At the former place, I saw several well marked chronic cases of Red-Water; blood smears were obtained and examined on my return to Vancouver, only a few parasites were present. It was only after a prolonged examination, that I was able to demonstrate the presence of a few piroplasmata, a twin parasite was rarely observed and this fact also applies to the examinations previously conducted. In many instances, the number of parasites observed averaged

6-8 per smear and many of them were extra-corpuscular, others were dimorphic, while some were disintegrated and exhibited no distinct karyosome staining. Both of the cases examined at one farm, 7 miles from Chilliwack, were of long standing, one of the cows had been infected at intervals during the past three years, no history of ticks ever having been found on these cattle could be elicited but ticks were stated to have been observed on the rabbits. At Mount Lehman, I visited another farm, and with the kindly assistance of the Local Farmer's Institute, one of the owner's cows was purchased and slaughtered. I was extremely anxious to obtain a post-mortem examination, consequently, the offer of the above cow, a chronic case was taken advantage of, in order to determine if possible the nature of the lesions peculiar to this disease and at the same time note the comparative differences if any, to allied diseases in other countries.

The subject was 8 years old and had had 3 attacks of Red-Water extending over a period of three years, the animal being attacked in the Fall and Winter and was apparently healthy during the Summer months. On examination, previous to slaughter the following clinical symptoms were noted—marked hæmaturia, general marasmus, severe muscular tremors, especially in the posterior region and flanks, visible mucosæ and hairless spots exhibited a distinct hæmapheic icterus, a small swelling was also present in the parotidean region close to the angle of the mandible. The cow was shot and on removal of the skin the carcass was observed to be very emaciated, the subcutaneous fat and tissues icteric, the blood was very red and watery, coagulated quickly and the serum was distinctly hæmoglobinæmic. The swelling in the parotidean region also involved the periosteum of the mandible and was caused by Actinomycotic infection. The lungs were practically normal, only a few pigmentary spots being observed and a small lesion of hæmostatic pneumonia. The walls of the heart were very thin and a few petechiæ were present on the ventricular endocardium. The liver was slightly enlarged, fatty and engorgement of the gall capillaries was well marked in the portions of the organ contiguous to the gall bladder, the latter contained a quantity of dark green coloured bile, thicker than normal but not inspissated. The stomach did not show any marked lesion but the mucosa of the Abomasum was slightly hyperæmic, no ulcerations were present. The mucosa of the entire intestinal tract was markedly anæmic, the Duodenum, in the region of the Ductus Choledochus was slightly bile stained. Spleen slightly enlarged and indurated, the capsule being thickened, blood vessels swollen, cut surface dark purplish-colour, trabeculæ also thickened. The Suprarenal capsules were slightly enlarged. The kidneys were slightly enlarged, firmer to the touch than normal, capsule slightly adherent, a number of cysts were present on the margin of the cortex, about the size of a small pea, they contained a yellowish-brown viscid fluid, there was no trace of hydatids on section, the cut surface presented a reddish brick colour, no pus was present in the pelves and no blood clot, although the lining membranes of the pelves were swollen and studded with hæmorrhagic centres. The bladder was full of claret wine coloured urine, mucosa swollen, congested, in rugæ and studded with numerous ecchymotic hæmorrhages. Studded here and there, but most pronounced at the openings of the ureters were several fibro-papillomatous growths. A few of the Mesenteric lymph-glands were enlarged, the parenchyma, being of a brownish-red colour (but not juicy.) The above are the principal lesions observed, the other parts of the carcass were anæmic.

BLOOD EXAMINATION.

Smears were prepared from the blood, kidneys, liver, heart and spleen, fixed and stained on my return to Vancouver. On examining one of the smears prepared from the peripheral circulation, I was astonished to find a large flagellate body belonging to the Trypanosomidæ. I am uncertain to which genus it belongs as in this research, I was not looking for Trypanosomidæ, consequently, the technique usually adopted in such research was not observed. I believe this is the first instance in North America,

where this type of parasite has been found in cattle. This flagellate may be the cause of considerable loss and presuming, that is has been recently introduced, or even that it is indigenous to the Fraser River Valley, I would draw your attention to the danger of neglecting the determination of what species of blood sucking Diptera or Anophelinæ may be responsible for the spread of this parasite. In dealing with double flagellated trypanoplasma, Prowazek, considered that in the course of phylogenesis sometimes one pole or the other has been suppressed. Schaudinn, expressed the opinion that the flagellate Herpetomonas muscæ domesticæ could be traced to a doubly flagellated trypanoplasma. These observations and results of other investigators point to the importance of tracing, if possible, the origin of the flagellate body I discovered in the blood of Mr. Turner's cow at Mount Lehman.

In the blood smears, also the smears prepared from the heart, kidneys and the spleen, a few piroplasmata were observed, the most were present in the kidney smears—the piroplasmata were mostly amœboid forms, a few dividing forms and flagellated parasites were also observed. The erythrocytes exhibited a distinct poikilocytosis and in the smears prepared from the peripheral circulation, polychromatophilia of the erythrocytes was well marked——

PATHOLOGICAL ANATOMY.

The following is the result of the mieroscopical examination of the principal lesions observed in the cow slaughtered at Mount Lehman. Pieces of the organs and the tissue were hardened and sections cut and stained—*Spleen*—the spaces contained less cells than normal and many of the leucocytes and endothelial cells contained a red pigment—some of the malpighian bodies exhibited more or less fibrillated tissue and the trabeculæ were hypertrophied.

Kidneys.—The changes were those of a well marked chronic parenchymatous nephritis; pigmentary deposits were present in the stroma and the cysts on the surface of the cortex were probably due to the obstruction of the tubules, caused either by the inflammatory changes in the parenchyma or pigmentary deposits—the walls of the cavity of the cysts were lined with flattened epithelial cells—considerable interstitial infiltration was also present.

Bladder.—Sections of the wall of this organ showed the presence of well marked subepithelial hæmorrhages, while the growths on the mucosa, especially those at the entrance of the ureters were found to resemble vascular papillomatous fibromata, an extravasation of blood was present in the center of the growths and associated with this were marked pigmentary deposits, probably due to hæmosiderosis. A bacterial invasion was also observed, associated with the subepithelial hæmorrhages, the cocci being arranged in zooglea—these organisms are probably associated with a terminal infection or a contamination from without—the recurrence of the disease and altered condition of the urine injuring the mucosa of the bladder and thus forming a suitable nidus for a bacterial growth, as well as favouring the extension of infection by way of the uro-genital tract, owing to the albuminous condition of the urine causing a contamination of the vagina and external labia. The valves at the oblique entrance of the ureters at the postero-superior portion of the bladder were thickened and continuous with the largest of the above described vascular papillomatous fibromata.

Lymph-Glands.—Sections were examined from one of the enlarged mesenteric glands—the endothelial lining of the lymph spaces, as well as the follicular cords were disintegrated—there was a well marked extravasation of blood cells in and around the blood vessels contiguous to the interfollicular cords. The connective tissue of the trabeculæ was slightly hypertrophied and fibrillated tissue containing pigment occurred in portions of the stroma. This concludes the pathological changes I have observed in the principal lesions present in the cow slaughtered at Mount Lehman. The animal was a marked instance of a mixed infection viz.—Actinomycotic, Trypanosomidæ and Piroplasmata infection, associated with a bacterial inva-

sion of the submucosa of the bladder. It is self evident that this subject although afflicted with typical chronic Red Water as it occurs in this province, was far from being a satisfactory case to determine the typical lesions peculiar to this type of Red Water. It is very insidious and where hæmaturia is absent, can be overlooked and owing to climatic conditions serious epidemics do not occur—on the other hand, the cold prevalent in British Columbia within a radius of about 100 miles from the coast does not appear to be severe enough to kill off the infection. It must also be borne in mind that a region not previously infected can ultimately become a zone of permanent infection. In 1887, I had occasion to investigate a severe outbreak in California and at present the mortality is nothing like as severe, although the area of permanent infection is much more extensive. Many farmers have informed me that the ravages of this disease practically kills off the increase. Medicinal treatment is practically useless and at the best, can only alleviate individual cases temporarily, consequently preventitive measures must be introduced. It is a peculiar chronic type of piroplasamata infection and bears a closer resemblance clinically to human malaria than any other form of piroplasmoses I have met with.

The above concludes the result of my observations to date regarding the Red Water disease in this province. The role of the tick or other intermediary host remains to be determined. The further consideration of the Trypanosomidæ infection is less important and on receipt of authority, same will be dealt with.

Tuberculosis.—This is the only other important disease that has come under my observation since I commenced original research in your department. I can only refer to the disease in swine and I have no doubt that you have read the observations I made in my special report dealing with the outbreak of swine plague, &c., at South Vancouver. At that time I was astonished to note the enormous number of swine that were infected with tubercular lesions, both generalized and localised in the mesenteric glands. It is well known that tuberculosis becomes generalised very quickly in swine, consequently, the consumption of the flesh of such animals is a source of great danger to mankind, especially where no trained veterinary inspection is carried out.

Respectfully submitted,

THOS. BOWHILL, F.R.C.V.S., F.R.P.S.,
Inspector.

The Veterinary Director General,
Ottawa.

REPORT ON A SO-CALLED CASE OF LOCKJAW SEEN AT LETHBRIDGE DOURINE EXPERIMENT STATION.

Sir,—On June the 15th, at 9.30 in the evening a number of horses were driven into the corrals, all were in apparent good health at the time, they had come some ten or fifteen miles, but had not been over driven.

No food or water was given to those horses until noon next day. At 11 a.m. I noticed that a mare branded X A was ailing, she had a very distressed look; her hips and nostrils appeared to be distorted.

The horses were taken out to graze at noon, and I did not see this mare again till 3 p.m., at this time a cowboy came to me and asked if I could do anything for her, as she was in a very bad way.

The symptoms then noticeable were as follows:

Gait, abduction of hind limbs, and extreme flexion (spasmodic), I observed her strike her belly several times.

Facial muscles twitching, the superficial shoulder muscles also twitching, otherwise the muscles did not seem harder than usual, except the facial; along the back they felt quite normal.

Lips and nostrils distorted and very hard.

The jaws were set tightly, a few blades of grass were held between the lips, and had been there for at least two hours.

Membrana nictitans not more in evidence than usual. The eyes were somewhat sunken. The ears were laid back close together. The parotid gland stood out very plainly and was hard to the touch. Spasms of the pharyngeal muscles were not very marked; the animal sucked up a little water when it was offered. The heart beats were tumultuous, the temperature 101⅘. The animal was cast, and struck the ground very hard, the jaws relaxed for a minute, but set tight again. Chloroform was administered and the animal kept under its influence for half an hour. The twitchings gradually ceased, the nostrils regained their normal position and the mare was easier, she was allowed to lie for some time, then a little cold water was thrown on her head, and she got up. She was then driven down to the river, there was marked improvement in her gait at this time. On reaching the water she walked in belly deep, and remained there voluntarily for over an hour, dipping her head in and out of the water. Her condition improved gradually from that on, and when I saw her later in the evening she could trot. The nervous symptoms did not return though at this time the muscles of the jaws still looked somewhat tense. Complete recovery had taken place next morning, the mare had a full belly and looked as well as ever. Later in the day she was driven several miles, the symptoms did not return, and she has remained well ever since.

The local superstition about this disease is that if horses are run hard several miles, then put into a corral, without feed and water they will develop lock jaw within a variable time, but generally in from 12 to 24 hours.

I had frequently heard cowboys speaking about horses getting the lockjaw if kept in a corral without feed and water, but had always thought it was true tetanus and that the infective agent gained entrance by wounds; hungry horses will often gnaw a fence and doubtless get many dusty splinters into their gums.

Dr. Gallivan and I saw another case at Stirling where some horses had been rounded up for inspection similar in all outward appearances to the one just quoted. In this instance the horses had been driven a long way and had been put into a corral, also without feed and water.

The period of incubation in this case was about 18 hours.

The cowboys have a number of quack methods for unlocking the jaws, but I have not met any one who knew of a sure cure. Some horses seem to recover, others die.

The affection seems to be fairly common, but is rarely seen by practitioners as it generally occurs out on the range.

Dr. Higgins when in the West last summer with Dr. Hargrave diagnosed a case at McHugh Bros., Gleichen, through having read my report, and corroborates my statements with regard to the symptoms.

Dr. Warnock tells me he has seen a number of fatal cases.

Dr. Hargrave treated a case successfully near Medicine Hat, and I heard of another case where recovery had taken place in Lethbridge.

Dr. Fritz, Assistant Dourine Inspector for the Bureau of Animal Industry, informs me that the affection is common in the western States.

This case appears to me to have many points which are out of the common, the rapid onset of the disease, the short incubative period, the favourable termination, and above all the similarity which exists between it and true tetanus.

I have the honour to be, sir,
Your obedient servant,

SEYMOUR HADWEN,
Assistant Pathologist.

The Veterinary Director General,
Ottawa.

8-9 EDWARD VII., A. 1909

SPECIAL REPORT ON GLANDERS.

By J. G. Rutherford, Veterinary Director-General and Live Stock Commissioner.

Ottawa, September 1st, 1906.

Sir,—I have the honour to present a special report upon the work performed during the last four years by this Branch of your Department in dealing with glanders.

This disease has long been rightly looked upon as one of the most serious and dangerous of animal plagues, and even were there no recent striking developments, or rather circumstances, demanding special attention, a report of this kind would not be out of place.

As matters stand now, however, there are grave reasons for the careful summing up of the whole situation, and in my opinion for the serious reconsideration of the views held regarding the disease by a majority of the veterinary practitioners of this continent, and for a radical change in the attitude generally assumed by governmental bodies in dealing with it.

It is quite unnecessary to occupy your time by any dissertation on the general history and pathology of glanders, or on the serious consequences not only to horses, but to human beings, which its continued existence in any community is liable to entail. It is equally needless to descant upon its prevalence on this continent and the importance of the adoption of an intelligent and comprehensive policy, having in view its immediate control and ultimate eradication.

As statistical and other details have been furnished in my various annual reports, I propose to confine myself to a brief history of our recent work in connection with the disease, followed by a short summary of the conclusions reached, on several points regarding which opinions, even to-day, differ somewhat widely.

It is almost exactly four years since the discovery of a serious outbreak of glanders in the City of Ottawa rendered necessary a prompt decision as to whether the control of this disease was to be assumed by the Federal authorities, or left, as it had up till then been, except in the North-West Territories, and in the case of one or two isolated outbreaks elsewhere, in the hands of the Provinces.

After carefuly considering my representations, you decided that it would be in the best interests of all concerned to bring the disease under the direct control of the Health of Animals' Branch of your Department. This was accordingly done, except in Manitoba, where, owing to the fact that the legislation had long been such as to enable the Provincial authorities to deal with it, if they chose to do so, in a most thorough manner, the work was not taken over by the Federal government until 1905.

From August, 1902, until the present we have maintained a continuous effort to eradicate glanders in the Dominion, a work, I may say, of no small difficulty, when the size of the country, its climate and the conditions under which horses are kept in many districts are taken into full consideration.

The discovery of mallein in 1890 revolutionized entirely the views of veterinarians regarding glanders. Older veterinarians will remember the formidable chain of symptoms which, in their student days, were considered essential to a diagnosis of glanders, as also the various ironclad rules to be followed in differentiating between it and that now somewhat dubious disease 'nasal gleet.'

It is now recognized that horses may be, and only too frequently are, seriously affected with glanders while presenting, so far as outward and visible symptoms are concerned, an appearance of perfect health. The knowledge of this fact has, of course, necessitated a complete change in the methods of dealing with outbreaks of the disease. Whereas it was in former years, and in some countries is, even to-day, considered sufficient to slaughter animals showing clinical symptoms, while ignoring entirely those which may have been in contact, the conscientious modern veterinarian

insists on the latter being submitted to the mallein test, and if found to react, either slaughtered or segregated for observation and further tests.

In studs where clinical cases have occurred there is a strong likelihood that some of the contact horses will be found to be affected, although for a time at least they may present no external symptoms.

Any system, therefore, which ignores this frequent condition is faulty and likely to cause a dissemination of the infection, particularly when, as is often done, studs in which glanders has been found to exist, are dispersed among innocent purchasers.

Under ordinary circumstances, especially when no provision for reasonable compensation exists, the problem presented by the condition outlined above is exceedingly difficult of solution. While horse owners, unless very poor, very ignorant or very unprincipled, are generally willing to have clinical cases destroyed, they quite naturally object to the slaughter of animals which may have reacted to mallein, but show no evidence of disease and remain in good working order.

In some countries the authorities overcome the difficulty after a fashion by leaving the contact horses severely alone, thus avoiding the responsibility which would have to be assumed if the animals, on being tested, were found to react. Untested, they are presumably healthy and are left free from restrictions.

As an illustration of the results of pursuing a policy of this kind, the following figures from the returns of the Board of Agriculture for Great Britain are very interesting:—

	Horses destroyed.
1898	1,385
1899	1,472
1900	1,858
1901	2,370
1902	2,073
1903	2,499
1904	2,628

It is not, however, necessary to go to Great Britain for proof of the folly of ignoring the contact horse. Similar object lessons are furnished by the conditions prevailing in more than one district in Canada, and while, of course, I cannot presume to speak authoritatively on these matters, I feel confident that in some of the United States of America glanders is rapidly increasing owing to this cause.

The evil is greatly intensified by the fact that, where the proper authorities are inert, private testing of infected studs is continually going on, the reactors being subsequently sold as expeditiously as possible. Prominent veterinarians in Great Britain credit these private mallein tests, conducted by unscrupulous owners through equally unscrupulous practitioners, with the notoriously rapid spread of the disease in that country during recent years.

The same thing is undoubtedly true in America, and here let me point out another condition which, taken in conjunction with the private test, constitutes an additional and very important factor in the spread of glanders.

I refer to the great facility with which, in these modern days of cheap steam transportation, horses may be moved in large numbers from place to place.

While, especially in communities where mixed husbandry prevails, glanders may never obtain a foothold, because in these districts horses from a distance are, with perhaps the exception of valuable and generally healthy breeding stock, but seldom introduced, I would remind you that the great fluctuations in the value of horse flesh during the decade just passed have brought about the movements of large numbers of these animals from one district to another, and that glanders has, beyond doubt, been extensively spread by this means.

Perhaps the most dangerous agents in thus disseminating glanders are the western range horses, which, during the last ten years, have been distributed in large numbers through the country. Glanders on the range exists to a considerable extent in a latent and often very mild form, but it rapidly develops when the animals are broken, stabled and put to work. Many of the most widespread and most serious outbreaks with which we in Canada have had to deal are directly traceable to importations of range horses. Mallein is, of course, seldom used on the range but it is a common thing for owners to shoot down any clinical cases they may notice, the others, showing no symptoms, being sold as healthy, with the result above-mentioned.

Having made this digression in order to clear the way for what follows, I will, with your permission, revert to the time when, in 1902, I was called upon to formulate a definite policy for the control of glanders in the Dominion. At that time there existed no provision whatever for the payment of compensation, and this, of course, rendered quite impossible the slaughter of non-clinical reactors, even if I had then been anxious to adopt this radical policy.

As a matter of fact, however, I was, like many other veterinarians, under the impression obtained from a number of reliable professional sources, that it was quite unnecessary to kill horses of this class, and that satisfactory results would follow the adoption of a policy of testing all contacts with mallein, and retesting from time to time such as reacted until they either ceased to react, or through repeated reactions, furnished conclusive evidence that they were curable. For a period of slightly over two years this plan was carefully and conscientiously followed, but as time progressed it became evident that the results obtained were altogether disproportionate to the risk and labour involved. Not only did the number of horses on our hands keep constantly increasing, but in many cases individual reactors held among others for future tests developed clinical symptoms, and thus established fresh centres of infection. Such horses not only endangered the other reactors with which they were being kept, and some of which might have a possible chance of recovery, but indirectly threatened, through the various every-day channels which horsemen well understand, the health of other animals not actually housed with them.

As our opportunities for observation increased and further experience was obtained, serious doubts as to the conclusions previously reached by eminent veterinarians, both in Europe and America, as to the impossibility of glanders being transmitted by reactors not showing clinical symptoms, or by ceased reactors began to assert themselves. As the work went on evidence gradually accumulated that many of the so-called ceased reactors were not only not permanently cured, but were properly to be looked on with grave suspicion as being likely to introduce glanders among healthy horses with which they might be brought in contact. Several outbreaks of more or less severity and extent can be traced directly to these ceased reactors, and before I conclude, I shall endeavour to demonstrate the advisability of dealing with animals of this class as possible future centres of infection. As the owners of ceased reactors are generally more than willing to dispose of them as soon as possible after their release from official control, the risk of bringing infection to the stables of their unsuspecting purchasers constitutes an added danger which cannot reasonably be ignored.

The conclusion that neither non-clinical reactors nor ceased reactors could, with safety, be considered non-infective, having been thus forced upon me, there remained only two alternatives, either to follow the futile and already discredited policy of killing clinical cases and ignoring contact animals, or to face the situation and adopt the only intelligent course, the destruction of all horses showing the typical reaction to mallein whether presenting any external manifestations of glanders or not.

I need scarcely say that this would have been absolutely impracticable without provision for the payment of liberal compensation The question of compensation

for the slaughter of diseased animals has always, and in all countries, been one of great difficulty, and the disinclination of those in authority to assume the financial outlay involved, has been one of the chief obstacles encountered by veterinary sanitarians engaged in dealing with animal plagues.

When, however, the situation was clearly laid before you, you did not hesitate to ask parliament for the needed authority, and the no less necessary funds, with the result that in September, 1904, we were enabled to begin the slaughter of reactors and to pay for them at a reasonable, and when their intrinsic value is considered, a most liberal rate.

From September, 1904, to March, 1905, compensation was paid for non-clinical cases only, but it was soon seen that in order to avoid friction, as well as to secure prompt notification of outbreaks, it would be necessary to pay for all animals slaughtered, whether visibly affected or not. On March 25, 1905, therefore, the following regulations came into effect:—

Dominion of Canada.—Regulations Relating to Glanders.—By Order in Council dated March 25, 1905, in virtue of 'The Animal Contagious Diseases Act, 1903.'

1. No animal which is affected with or has been exposed to glanders shall be permitted to run at large or to come in contact with any animal which is not so affected.

2. Any veterinary inspector may declare to be an infected place within the meaning of the 'Animal Contagious Diseases Act, 1903,' any steamship, or steam or other vessel, or any place or premises where the contagion of glanders is known or suspected to exist.

3. No horse, mule or ass shall be removed out of an infected place without a license signed by an inspector.

4. Veterinary inspectors are hereby authorized to inspect and to subject to the mallein test any horses, mules or asses affected with glanders or suspected of being so affected, or which have been in contact with animals so affected, or suspected of being so affected, or which have been in any way whatsoever exposed to the contagion or infection of the disease of glanders, and for the purpose of making such inspection or test to order any such animals to be collected, detained or isolated.

5. Horses, mules or asses affected with glanders, whether such animals show clinical symptoms of the disease, or react to the mallein test without showing such symptoms, shall on an order signed by a duly appointed inspector of the Department of Agriculture, be forthwith slaughtered and the carcasses disposed of as in such order prescribed, compensation to be paid to the owners of such animals if and when the Act so provides.

6. In the event of the owner objecting to the slaughter of animals which react to mallein, but show no clinical symptoms of glanders, the inspector may order such animals to be kept in close quarantine and retested, such retests, however, in no case to exceed two in number and to be completed within four months of the first test, provided, however, that owners deciding to have their animals quarantined rather than slaughtered shall forfeit all right to compensation.

7. Horses, mules or asses reacting to the third test with mallein shall be forthwith slaughtered on an order signed by an inspector, and the carcasses disposed of as ordered.

8. Inspectors are hereby authorized to permit owners of horses, mules or asses which give no reaction to the third test with mallein and which have at no time shown any clinical symptoms of glanders, to retain and use such animals, subject to the conditions contained in the license signed by the inspector.

9. Before an order is made for the payment of compensation in any of the cases aforesaid, there must be produced to the Minister of Agriculture a satisfactory report,

order for slaughter, certificate of valuation and slaughter, and certificate of cleansing and disinfection, all signed by an inspector.

10. The certificate of an inspector to the effect that an animal has reacted to the mallein test or has shown clinical symptoms of glanders, shall, for the purpose of the said Act and of this order be *prima facie* evidence in all courts of justice and elsewhere of the matter certified.

11. Every yard, stable, outhouse or other place or premises, and every wagon, cart, carriage, car or other vehicle, and every utensil or other thing infected with glanders shall be thoroughly cleansed and disinfected by and at the expense of the owner or occupier, in a manner satisfactory to a veterinary inspector.

J. G. RUTHERFORD,
Veterinary Director General.

Department of Agriculture,
Ottawa.

Although the time which has elapsed since the inauguration of the policy of compensation and slaughter is altogether too short to enable us to form a definite and decided opinion as to its wisdom and probable effectiveness in securing the eradication of glanders, the following figures furnish convincing proof that it has a strong tendency to remove the disinclination generally evinced by owners to report outbreaks of the disease and to permit the slaughter of their horses:—

	Tested.	Reacted.	Killed.	Clinical.
1902-3	1,062	466	219	219
1903-4	1,387	420	499	499
Inclusive of Manitoba—				
1904-5	4,899	1,854	2,113	932
1905-6 (to March 31)	3,957	1,285	1,387	561
1906-7 (to Aug. 31)	4,200	850	946	502
Total	15,505	4,875	5,164	2,713

In considering these figures I desire particularly to draw your attention to the large increase, not only in the numbers of those tested and killed as reactors, but of those showing clinical symptoms. These figures furnish incontestable evidence that the present system brings to light a very large number of cases of glanders, which, without provision for payment of compensation, would never have been reported.

Under the conditions formerly existing, there was a tendency on the part of owners, and doubtless of some veterinarians, to avoid trouble and loss by concealing the existence of glanders. Where no compensation is paid many owners, otherwise quite respectable, are undoubtedly in the habit of allowing clinically affected cases to run their course, working them as long as possible, and finally either permitting them to die or having them quietly destroyed; while those less honest or more unprincipled have no hesitation in subjecting them to palliative treatment, with a view to removing or concealing suspicious symptoms, and subsequently disposing of them to the best advantage.

I am satisfied that the system now followed in Canada will, by removing temptation, prove effective in overcoming, at least to a very great extent, these tendencies shown by depraved human nature under less favourable circumstances.

It is interesting to note the manner in which the new regulations are received in different parts of the Dominion. In districts where the disease has prevailed to any considerable extent, and where horse owners realize its serious nature and the importance of stamping it out, the new order of things is heartily welcomed. On the other hand, in places where the people are comparatively unfamiliar with glanders, the new regulations are looked upon as unnecessarily severe, and people complain bitterly that their horses are being slaughtered without good and sufficient reason. The claim is

made that our inspectors destroy more horses than the disease itself would ever be likely to kill, the argument being advanced that only a very limited number of horses die from glanders under ordinary conditions, and that the disease seldom or never becomes epizootic.

Facts, however, are entirely against this contention. The figures already quoted from the returns of the Board of Agriculture of Great Britain indicate that, under modern conditions, the disease, unless properly controlled, is certain to spread rapidly and to cause a constantly increasing loss in horseflesh.

As an illustration of this, I would quote from our own experience the case of one Canadian lumber company in a remote part of the country, which reported last year for the first time the existence of glanders among its horses. Inquiry elicited the fact that in less than four years upwards of fifty head of valuable horses, owned by this company, had died of glanders. Of thirty-six survivors, thirty-four reacted to mallein, and were destroyed. Of the two remaining, neither had been in contact with the diseased horses.

We have a number of similar cases on record, but it would scarcely be possible to furnish a better illustration of the evil results certain to follow carelessness or neglect in dealing with glanders.

In this connection I cannot refrain from quoting an extract from the London *Lancet* of July 5, 1905, which, in a review of the report of the Board of Agriculture, speaks as follows:—

'Glanders is admittedly on the increase, and it is time that some radical measures were taken to control the disease. In 1894 there were only 502 outbreaks reported, but in 1904 these had increased to 1,539, and 2,658 horses were killed as glandered. More power ought certainly to be given to the veterinary inspectors to test the in-contact horses with mallein, as by this agent an almost infallible diagnosis can be made within 24, or at most, 48 hours. The expense, although great the first year, would not be excessive if allowed to spread over a period of years; and where a preventable disease, which also causes the deaths of numbers of human beings each year, is concerned, the cost ought certainly not to be considered too seriously as the reason why it should not be taken thoroughly in hand.'

It is gratifying to note that the British authorities are being urged to introduce the identical policy which we have already adopted in Canada.

While dealing with this phase of the subject, I would point out that if the adoption of our system is deemed necessary in a small country like Great Britain, where police and inspection work has been reduced to a science, there can be no doubt of the wisdom of its adoption in the Dominion of Canada, where the distances are magnified and the population, especially in some districts, sparse to a degree, although I am glad to say that the last named condition is being rapidly altered by the constant influx of desirable settlers who are coming from all parts of the world, but perhaps in greatest number from the western United States.

In this connection, I would say that while we do not think it necessary to test the human immigrants from that country, I think it altogether likely that we will be compelled, in the near future, to impose this precautionary restriction upon those of the equine species, as the records in our possession indicate that a considerable number of the outbreaks of glanders in western Canada are due to imported American horses, of which we have for a number of years back been absorbing from 25,000 to 30,000 per annum.

Having now indicated, perhaps at too great length, our present attitude in relation to glanders, I would like to lay before you, as briefly as possible, some of the facts brought to light in the course of our work, which have convinced us that in the war against glanders no quarter should be given to the typical reactor, whether he shows clinical symptoms or not.

I have already given you some figures as to the number of horses with which we have dealt during the last four years. In connection with what I am about to say, however, I would call your attention to the fact that up till August 31, 1906, we have tested 15,505 horses, and have actually made 18,177 mallein tests.

The marked disproportion between the number of horses tested and the number of tests made is attributable to the fact that from 1902 to 1904 we, as already stated, followed a retesting policy. It will, I think, be conceded that the number of tests made, each of which was carefully reported, is sufficient to furnish a reasonable basis for definite and intelligent opinions on the various points relative to mallein, its uses, effects aand the conclusions which may reasonably be drawn therefrom.

While perhaps to some extent reversing the natural sequence of events, I propose to refer first to the danger inseparable from the keeping alive of ordinary non-clinical reactors. With regard to this point, I am not in a position to furnish any great amount of statistical information for the reason that from the very beginning of our present operations animals of this class falling into our hands have been, except in the case of a few which early became ceased retractors, so dealt with as to prevent the possibility of their coming into contact, direct or indirect, with healthy horses.

When engaged in private practice, however, I had an opportunity of forming an opinion on the subject, for although, after the use of mallein was adopted, which, with me, was in the year 1893, I invariably advised my clients to destroy all typical reactors, the law did not make their slaughter compulsory, and many were permitted to live. Not a few subsequent outbreaks of which I was cognizant were undoubtedly due to the retention and distribution of infection by these apparently healthy animals.

As a matter of fact, there has never been, at least among intelligent and single minded veterinarians, any great tendency to belief in the harmlessness of horses which continue to give typical reactions to mallein, even when they present no visible symptoms of glanders. The departmental committee appointed in 1901 by the Board of Agriculture of Great Britain for the purpose of conducting experimental investigations with regard to this and kindred subjects, reached the conclusion that these apparently healthy reactors are capable of transmitting glanders. The committee in question comprised the late Mr. A. C. Cope, Mr. Wm. Hunting, Sir John McFadyean and Dr. James McI. McCall, all men of high professional attainments and great experience in dealing with glanders. One of the points dwelt upon by them, viz., the suddenness with which a reactor may become clinically glandered, is worthy of special note. Our experience in Canada has demonstrated beyond question the danger arising from this liability of reactors to suddenly develop acute symptoms, and has shown further that a considerable proportion of these superficially healthy animals are in reality clinical cases.

As under our present regulations such horses are slaughtered, opportunities for post-mortem examinations have not been wanting, and in many cases showing absolutely no external symptoms, extensive ulcerations have been found high up in the nasal passages, while the presence in this situation of minute nodular lesions, undoubtedly specific, has been strikingly frequent. These discoveries bear out the opinion which I have long held and frequently expressed regarding the importance, from an infective point of view, of enlarged submaxillary glands in reacting animals. There is never smoke without fire, and these glands are not likely to show tumefaction without a definite pathological reason.

Leaving nasal lesions aside, it is well known that in typical reactors glanders nodules are invarably found in the lungs, and not unfrequently in other organs, although the tendency to localization in the lymph nodes, so common in bovine tuberculosis, is much less frequently noted in glanders.

Again, I would remind you of the days before mallein was heard of, when, in spite of all our efforts and precautions, case after case, and outbreak after outbreak, of glanders would occur in the same stable. After each fresh outbreak the most

thorough disinfection was practised, and all the surviving horses subjected to careful scrutiny and continued close observation. Six months, or perhaps a year, would elapse and then another case or series of cases would occur. We blamed the stables, we thought the contagion, or, as we then called it, the virus, was immortal and indestructible. Now we know that, outside of the animal body, the life of the bacillus mallei is, under the most favourable conditions, limited to three or four months. In the animal body it is a different matter, and the cause of the mysterious recurrent outbreaks was the chronic latent case of glanders, then unrecognized, but now, through the agency of mallein, marked down and known as a reactor.

In tracing the origin of primary outbreaks in hitherto uninfected localities, we almost invariably find that the disease has been introduced not by a well marked case of glanders, but by a non-clinical contact horse, often a reactor, generally purchased by an unsuspecting farmer, ignorant of the fact that his new bargain has recently come from an infected district, and possibly from a badly infected stud.

Further evidence against the reactor will be incidentally adduced in the notes which I am about to lay before you regarding his close connection, the so-called ceased reactor.

Ceased reactors, so-called, should, in the light of our experience, be divided into three distinct classes:—

1 Those which, while not properly reacting to mallein, are, owing to a slight thermal rise or a septic infection, more or less serious at the point of injection, erroneously classed as reactors by the veterinarian making the test.

2. Actual ceased reactors, comparatively few in number, and almost invariably, in our experience, consisting of horses tested when in the incipient stages of glanders, or at any rate when but slightly affected, as evidenced by the fact that their original reactions, though typical, are not as well marked either thermally or locally, as those given by clinical cases or by these animals which, while perhaps not showing external symptoms, are suffering from the disease in an advanced form.

3. Those which having on one or more occasions definitely reacted, develop an acquired tolerance to the test, the latter being, however, of a temporary character, so that after the lapse of a varying period, generally from six to twelve months, a typical reaction again follows the injection of mallein.

The first-mentioned class are of but little importance, and demand no attention at our hands beyond a due consideration of the part they have already played, and doubtless will for some time continue to play, in prompting bootless discussion, and thus, to some extent, retarding the general adoption of mallein as an authoritative diagnostic agent.

The various causes which contribute to their being wrongly classified as reactors will, however, be shortly dealt with when we take up the question of reactions, typical and atypical.

The second class is naturally much more interesting, consisting as it does of horses which actually overcome the infection of glanders either through the action of mallein or by the efforts of nature unaided, or at least aided only by favourable physical conditions.

We have in Canada under supervision at present a considerable number of horses which have at one time or another, during the past four years, given a typical reaction to mallein, but which are now, so far as we can ascertain by periodical inspection and repeated testing, absolutely free from glanders. These animals, however, constitute a lamentably small proportion of the total number which reacted without showing clinical symptoms in the two years during which we followed the retesting system. Two years ago I stated that about 25 per cent of our non-clinical reactors had ceased to react, and were apparently free from glanders. At that time I expressed my great disappointment with the small return which this percentage gave for the risk and labour involved in carrying on the retests, and announced that

it was our intention to discontinue that method of dealing with glanders and adopt the plan which we are now following.

I am sorry to have to tell you that in classing all these horses as safely ceased reactors we were seriously in error. During the intervening period a considerable number of them have rejoined the reacting ranks, and have been condemned as diseased. There are still, however, a number which have continued to stand not only the mallein test, but the test of time. These give absolutely no indication of being other than healthy horses, and thus, so far as can be seen at present, there is no reason to doubt that, in a proportion of comparatively mild cases of glanders recovery may and does take place.

We have found, moreover, that while it is not by any means possible to tell at the first, or even the second, test which of the affected horses will eventually become permanent ceased reactors, we can at one or other of these stages make reasonably certain of those which will not do so.

Animals which, on being first tested, show a thermal rise exceeding 104° Fahrenheit, accompanied by a characteristic reaction, those which give a more pronounced reaction to a second or subsequent test than they do to the first, and those which suddenly cease to react without showing a gradual lowering of the temperature and a corresponding abatement of the local reaction are not likely to become permanent ceased reactors.

Sound pathological reasons can, I think, be advanced for the lack of improvement shown by the first and second classes, but I must confess that I have no mental theory to fit the case of those last mentioned.

Having now dealt with the supposititious ceased reactors and with those which appear to make an actual and permanent recovery, it becomes our duty to discuss those animals, and they are, in our experience, by far the most frequently encountered and, needless to say, the most dangerous, which acquire a temporary tolerance to mallein, but which again give a definite reaction when tested, after sufficient time has elapsed to nullify the effects of previous injections. In the report of the special committee appointed by the British Board of Agriculture, to which I have already referred, the records given indicate that all the ceased reactors dealt with in the experiments showed an abnormally high temperature when tested with mallein some time after they had apparently ceased to react. I considered this a very suspicious circumstance, and one which furnished food for serious thought. In order to discover, if possible, the reason for this peculiar phenomenon, I determined to again submit to the mallein test a number of horses which had been kept for varying periods under supervision as ceased reactors. The results are very interesting, as may be gathered from the following examples from the report of Dr. A. E. Moore, one of our most careful and capable officers, who was entrusted with the task of conducting the investigations. The pathological work was, of course, done by Dr. Higgins.

Results of post-mortem examinations conducted on ceased reactors which again reacted on being tested, after a period of not less than six months:

Paddy, Grey Gelding, 16 years, No. 304.

	Max. temp. before inject.	Max. temp. after inject.	Max. size swelling.
1st test, May 22, 1903	100⅘	105	6x6
2nd test, June 7, 1903	100⅘	105⅘	4x5
3rd test, Sept. 7, 1903	100⅘	101⅘	2x3 ceased
4th test, Oct. 25, 1903	101	101	3x4
Retest after 1 year and 2 months, Dec., 1904	101⅘	104	3x6

Result of post-mortem of No. 304:—

Very few nodules scattered in the lungs, around some of these nodules a small quantity of lymph-like substance was seen, others encysted.

Jerry, Grey Gelding, aged, No. 307.

	Max. temp. before inject.	Max. temp. after inject.	Max. size swelling.	
1st test, June 6, 1903	100⅘	105⅘	3x4	
2nd test, Aug. 20, 1903	101	104	2x2	
3rd test, Nov. 19, 1903	100⅘	104	3x3	
4th test, Feb. 26, 1904	101⅗	101⅘	2x2	ceased
Retest, after 9 months, Nov. 15, '04	100⅗	104⅗	3x4	

From 20 to 30 small nodules seen in the lungs from the size of a pea to small bean, several places in right lung showing cicatricial tissue, all the nodules were deep seated, mostly encysted, and followed the large bronchial tubes. Three guinea pigs inoculated and from one bacillus mallei was isolated in pure culture.

Nance, Grey Mare, 8 Years, No. 308.

	Max. temp. before inject.	Max. temp. after inject.	Max. size swelling.	
1st test, Mar. 10, 1903	101⅘	104⅗	4x4	
2nd test, June 6, 1903	101	105	6x8	
3rd test, Aug. 20, 1903	99⅗	104⅘	6x6	
4th test, Nov. 19, 1903	100⅘	102⅘	5x6	
5th test, Feb. 2, 1904	100⅘	101⅘	3x3	ceased
Retest, after 9 months, Nov. 15, '04	100⅗	104⅗	4x4	

About ten very small nodules encysted, all deep seated in the lungs and near the bronchial tubes.

Two guinea pigs were inoculated 7-12-'04. They were still thrifty 8-6-'05, and had gained considerably in weight. They were chloroformed, no lesions found and cultures remained sterile.

Doll, Bay, White Face, 9 Years, No. 309.

	Max. temp. before inject.	Max. temp. after inject.	Max. size swelling.	
1st test, Mar. 23, 1903	99⅘	104⅘	2x2	
2nd test, June 6, 1903	100⅗	105⅘	4x8	
3rd test, Aug. 8, 1903	100⅘	104⅘	4x5	
4th test, Nov. 19, 1903	100⅗	102⅘	4x5	
5th test, Feb. 26, 1904	101	101	2x2	ceased
Retest, after 9 months, Nov. 15, '04	100⅗	104⅗	3x6	

Bronchial and mediastinal glands slightly enlarged. About twenty small nodules (pea) were found in the lungs, sixteen in the right lung and four in the left. Mostly encysted. Three guinea pigs were inoculated, and from one bacillus mallei was isolated in pure culture.

May, Black Mare, 10 years, No. 310.

	Max. temp. before inject.	Max. temp. after inject.	Max. size swelling.	
1st test, May 5, 1903	102	104⅗	2x6	
2nd test, Aug. 6, 1903	100⅘	104	3x3	
3rd test, Nov. 19, 1903	100⅗	104⅗	3x3	
4th test, Feb. 20, 1904	100⅗	100⅘	2x3	ceased
Retest, after 9 months, Nov. 15, '04	101	103⅗	3x3	

About 15 very small nodules found in lungs, all deep seated, and following the main bronchial tubes, mostly encysted.

Three guinea pigs inoculated 7-12-'04. From one pure culture of bacillus mallei were obtained.

In all these autopsies there was noted the peculiar injected appearance of the lungs which is seen when a reacting animal is destroyed immediately after testing. In all but one of these five ceased reactors a pure culture of the bacillus mallei was obtained. In this case the lesions found were characteristic, and it is probable that the bacilli were present. Only two guinea pigs were used for this inoculation.

The following very striking record is that of a horse which has ceased to react no less than three times in the course of the last three years. This animal is still isolated under close supervision, and although performing ordinary farm work daily, is in the pink of condition, and, to all outward appearance, absolutely healthy.

King, Bay Gelding.

	Max. temp. before inject.	Max. temp. after inject.	Max. size swelling.
1st test, Aug. 26, 1903	101	105	2x4
2nd test, Nov. 19, 1903	100⅖	104⅕	4x4
3rd test, Feb. 26, 1904	100⅖	103⅕	2x2
4th test, June 9, 1904	101⅕	101	2x2
5th test, July 5, 1904	101⅕	101	3x3
6th test, Nov. 14, 1904	101⅕	104⅕	3x4
7th test, April 7, 1905	101⅕	101	2x2
8th test, Nov. 1, 1905	100⅘	104⅘	4x4
9th test, July 7, 1906	100⅘	101	2x3

I append here three tables showing the different results obtained in testing, 1st, horses which have become permanent ceased reactors; 2nd, horses which after having once ceased to react, have again given a characteristic reaction to mallein after a period of from six months to 2 years; and 3rd, horses which have shown no improvement when tested at intervals of 30, 60 and 90 days, although never developing clinical symptoms.

Five guinea pigs were inoculated, ond from the organs of one a pure culture of bacillus mallei was obtained.

12 Horses which did not show any improvement by injection of mallein at intervals of about 30, 60 and 90 days, although never developing any clinical symptoms.

No.	——	Maximum Temperatures at				Maximum size of Swelling at			
		1st Test	2nd Test	3rd Test	4th Test	1st Test	2nd Test	3rd Test	4th Test
1	Brown gelding, 13 yrs	105⅘	105⅖	105	104⅗	2 x 3	4 x 4	3 x 4	4 x 4
2	Bay mare, 10 yrs	106⅖	106⅖	106⅕		4 x 6	2 x 5	6 x 8	
3	Bay gelding, 8 yrs	106	105⅘	105		3 x 4	5 x 8	5 x 6	
4	Roan gelding, 11 yrs	106⅕	105⅕	104⅕	105⅗	3 x 7	4 x 5	3 x 5	5 x 7
5	Chestnut gelding, 14 yrs	103⅘	105⅖	104⅗	105⅖	3 x 6	4 x 6	5 x 6	6 x 6
6	Black gelding, 9 yrs	105⅖	105⅘	105		4 x 5	3 x 5	4 x 5	
7	Bay mare, 9 yrs	105⅘	105⅕	105⅗		6 x 7	6 x 6	6 x 8	
8	Black gelding, 13 yrs	105	105⅖	105⅖		3 x 4	2 x 3	4 x 7	
9	Brown gelding, 10 yrs	104	105⅘	105		6 x 8	5 x 5	2 x 3	
10	Bay mare, 7 yrs	105⅖	104⅖	103⅖	105⅖	1 x 1	3 x 6	3 x 4	2 x 2
11	Bay gelding, 12 yrs	105⅖	105⅘	104⅘		1 x 3	2 x 3	2 x 3	
12	Chestnut gelding, 8 yrs	104⅕	103⅖	104⅕	105⅖	4 x 6	6 x 6	2 x 3	5 x 6

TWELVE Horses which became ceased reactors and did not react again at the end of periods varying from six months to one year and a half; retested at intervals of about 30, 60 and 90 days.

Never showed clinical symptoms at any time.

No.	—	Maximum Temperatures at					Maximum Swellings at					Remarks.
		1st Test	2nd Test	3rd Test	4th Test	5th Test	1st Test	2nd Test	3rd Test	4th Test	5th Test	
1	Brown gelding, 10 yrs.....	105	105	103⅕	100⅘	101⅘	3 x 4	3 x 5	5 x 6	1 x 2	2 x 2	Retested 17 months after ceasing to react.
2	Black mare, 9 yrs.....	104	103⅖	102⅗	102	101	2 x 2	4 x 6	2 x 6	2 x 3	1 x 2	" 10 " "
3	Black gelding, 11 yrs . ..	104⅕	102	101	100⅖	101⅘	1 x 2	2 x 2	1 x 3	1 x 1	2 x 3	" 17 " "
4	Bay gelding, 8 yrs.....	103	102⅖	101⅘	101⅕	101⅗	1 x 2	1 x 1	3 x 4	2 x 2	3 x 3	" 17 " "
5	Black mare, aged.....	104⅕	105	101⅗	100⅖	102⅕	2 x 2	2 x 3	2 x 3	2 x 3	2 x 3	" 17 " "
6	Bay gelding, 9 yrs.....	104⅗	103⅘	103	101⅖	100⅖	3 x 6	3 x 4	3 x 4	3 x 3	3 x 3	" 17 " "
7	Bay mare, 10 yrs...	104⅕	101⅖	100⅗	100⅖	102⅕	6 x 8	2 x 3	2 x 3	1 x 2	2 x 2	" 17 " "
8	Roan gelding, 10 yrs	103⅘	102⅕	101	100⅘	101	1 x 1	2 x 3	1 x 1	None.	1 x 3	" 12 " "
9	Brown gelding, 10 yrs....	104⅗	104	103⅕	101⅖	102	2 x 2	2 x 2	1 x 2	1 x 1	2 x 3	" 17 " "
10	Chestnut gelding, aged....	103⅗	103⅘	101⅗	100	101⅖	1 x 3	1 x 1	2 x 4	2 x 3	2 x 3	" 17 " "
11	Bay gelding, 6 yrs.....	104⅗	102⅕	100⅘	101⅕	.....	4 x 5	3 x 6	2 x 3	2 x 2	.. ..	" 7 " "
12	Bay mare, 6 yrs...	104⅖	102⅘	101⅕	101⅖	.....	3 x 3	2 x 3	2 x 3	2 x 2	.....	" 9 " "

Horses which became ceased reactors, but on being retested after an interval of from six months to a year and a half, again gave a characteristic reaction.

No.		Maximum Temperatures at :—									Maximum Size of Swellings at :—									
		1st Test.	2nd Test.	3rd Test.	4th Test.	5th Test.	6th Test.	7th Test.	8th Test.	9th Test.	1st Test.	2nd Test.	3rd Test.	4th Test.	5th Test.	6th Test.	7th Test.	8th Test.	9th Test.	Remarks.
1	Bay gelding, aged.	106	$104\frac{1}{5}$	$100\frac{4}{5}$	$104\frac{2}{5}$						2 x 2	2 x 3	2 x 3	4 x 6						
2	Black mare, 10 years....	$104\frac{2}{5}$	104	$104\frac{2}{5}$	$100\frac{4}{5}$	$103\frac{2}{5}$					2 x 6	3 x 3	3 x 3	2 x 3	3 x 3					
3	Grey gelding, aged	$105\frac{4}{5}$	104	104	$101\frac{1}{5}$	$104\frac{2}{5}$					3 x 4	2 x 2	3 x 3	2 x 3	3 x 4					
4	Bay gelding, aged..... .	$106\frac{1}{5}$	106	$103\frac{1}{5}$	102	$104\frac{1}{5}$					2 x 2	2 x 2	4 x 5	2 x 3	4 x 6					
5	Grey mare, aged.....	$105\frac{4}{5}$	$105\frac{2}{5}$	$103\frac{2}{5}$	$100\frac{1}{5}$	$104\frac{2}{5}$					3 x 8	None.	5 x 6	3 x 3	6 x 8					
6	Grey gelding, 16 years...	105	$105\frac{2}{5}$	$101\frac{2}{5}$	101	104					6 x 6	4 x 5	2 x 3	3 x 4	3 x 6					
7	Grey mare, 8 years.....	$104\frac{2}{5}$	105	$104\frac{1}{5}$	$102\frac{1}{5}$	$101\frac{1}{5}$	$104\frac{3}{5}$				4 x 4	6 x 8	6 x 6	5 x 6	3 x 3	4 x 5				
8	Bay mare, 9 years.....	$104\frac{1}{5}$	$105\frac{1}{5}$	$104\frac{3}{5}$	$102\frac{3}{5}$	101	$104\frac{2}{5}$				2 x 2	4 x 8	4 x 5	4 x 5	2 x 2	3 x 6				
9	Chestnut geld., 18 years..	104	$103\frac{1}{5}$	$100\frac{2}{5}$	100	$104\frac{2}{5}$					2 x 4	4 x 8	3 x 3	2 x 2	4 x 6					
10	Bay gelding, 15 years....	$100\frac{4}{5}$ rigors.	101 rigors.	101	$100\frac{2}{5}$	$103\frac{1}{5}$					2 x 4	4 x 7	3 x 6	1 x 1	6 x 12					
11	Bay gelding, 7 years.....	105	$104\frac{1}{5}$	$103\frac{1}{5}$	101	$104\frac{1}{5}$	$102\frac{2}{5}$	101	$104\frac{4}{5}$		2 x 4	4 x 4	2 x 2	2 x 2	3 x 4	1 x 2	2 x 2	4 x 4		Ceased to react twice
12	Bay gelding, 12 years....	$104\frac{2}{5}$	$105\frac{1}{5}$	105	103	$101\frac{2}{5}$	$103\frac{3}{5}$	$101\frac{4}{5}$	$101\frac{3}{5}$	$104\frac{3}{5}$	1 x 8	5 x 7	5 x 5	4 x 4	2 x 2	4 x 4	2 x 2	2 x 4	5 x 6	Ceased to react twice

I do not think it necessary to make any extended comment on the facts brought to light by this series of retests. So far as the possibility of the latter reactions being due to reinfection is concerned, I would say that this danger was fully considered and guarded against. If reinfection occurred in any of these cases it was through one or other of the so-called ceased reactors, and not from any outside source.

I may add that while the work performed by Dr. Moore was the most systematic and thorough of any which we undertook on similar lines, the results obtained by him were corroborated by like retests conducted by other officers in various parts of the Dominion.

Further proof of the dangerous character of these horses, which, through an acquired tolerance to Mallein, are erroneously classed as ceased reactors, is, I am sorry to say, furnished by our own official records, several instances having occurred in which horses held under supervision for periods deemed sufficient to ensure safety, were permitted to mingle with healthy animals, with disastrous results.

Not the least remarkable feature of these cases is the fact that they seldom develop clinical symptoms themselves, although, beyond doubt, many of them are capable of transmitting infection to others.

This report has already exceeded a reasonable length, but I cannot well close without giving the concensus of opinion arrived at by our inspectors as to what constitutes an actual and typical Mallein reaction. Ability to differentiate with certainty, at least in the majority of cases, between typical and non-typical reactions, is, for obvious reasons, perhaps the most important factor in the use of Mallein.

We are fortunate in having on our inspection staff a number of careful and closely observant men, and the results of their experience have been condensed as follows:

In horses affected with glanders from the 4th to the 15th hour after the injection of the usual dose of reliable mallein a distinct rise of temperature takes place, except in certain cases which will be specially mentioned later. The temperature gradually rises until the 14th or 15th hour after injection, when, after remaining at about the same height for a longer or shorter period, it gradually declines, the downward course being not unfrequently preceded by a slight secondary elevation.

This thermal disturbance should, under ordinary circumstances, indicate a rise of at least 2·5 degrees Fahrenheit over the highest control temperature taken before injection. The wide variation in normal temperature shown by the equine species, especially in Western America, demands the application to this rule of certain definite limitations. For instance, if invariably followed, a horse having a pre-injection temperature of, say, 99°, would be condemned at 101·5°, which might be well within his normal range. On the other hand, an animal with a pre-injection temperature of 102°, which is not at all strikingly abnormal in the west, would be allowed to reach without condemnation 104·4°, a point entirely outside of the normal range.

Other things being equal, 103° Fahrenheit would appear to indicate the danger line, but no fixed rule can possibly be adopted, close observation and sound judgment in the operator being of more importance than hard and fast ruling.

The thermal rise is accompanied, or rather followed, by a hard, tense and exceedingly painful swelling at the point of injection. This swelling is usually circular, and shows a tendency to increase from the eighth hour after injection, at the same time becoming more painful, affecting the muscles and causing marked lameness in the forelimb of the side on which the injection was made. It is often accompanied by swelling of the surrounding lymphatics, which also become intensely painful.

The local reaction does not, as a rule, entirely disappear for several days.

Besides the thermal and local reactions mallein produces well marked constitutional effects on animals suffering from glanders. The pulse and respiration are increased, rigors are frequent, sometimes slight, but occasionally violent, and continuing throughout the whole reaction. There is great depression, while loss of appetite, staring coat and disinclination to move are also commonly noted.

In clinical cases reaction is, as a rule, early and well marked, and most of our inspectors agree that the severity of the reaction is in direct ratio to the degree of infection or the stage which the disease has reached. Clinical symptoms not unfrequently make their first appearance during the test, generally from 24 to 30 hours after injection. In advanced cases they may persist, the animal rapidly breaking down, while in incipient cases they may gradually recede, the animal regaining a normal and comparatively healthy appearance. Clinical symptoms already evident are almost invariably aggravated by the test. One especially noteworthy feature is that in animals showing only a slight enlargement of the submaxillary lymphatic glands, these will become tense, swollen and painful as the test progresses. This also applies to other enlarged nodes. Dr. Moore describes one case in which both inguinal glands, slightly enlarged before the test, became, during its progress, so much swollen and so painful that the animal could scarcely walk. Post-mortem revealed specific lesions in both glands.

Occasionally all evidences of reaction are present, except the thermal rise, while in others the opposite is the case, and it may be noted that these eccentricities are not unfrequently shown by all the horses tested in certain outbreaks, and further that they persist throughout repeated tests of the same animals, although, under ordinary conditions, the local reaction has a tendency to become less well marked with each succeeding test.

In animals in the last stages of glanders, old horses, young foals and others of inferior vitality, a lowering of temperature not unfrequently follows the injection of Mallein. This is especially noticeable in advanced cases where the temperature is high at the time of injection. In actual outbreaks, contact horses, even when showing no clinical symptoms, but having a high initial temperature, dropping or remaining stationary after injection, should be condemned, especially when a local reaction occurs.

In fact it may be laid down as a general rule that a typical local reaction is proof positive of the existence of glanders, even when no thermal disturbance takes place.

There is not, as a rule, much difficulty in distinguishing between a typical and a non-typical reaction. The former has been already described. In the latter the thermal rise seldom exceeds 2°, and reaches its greatest height at or before the 12th hour, returning to normal before the 20th hour.

The swelling, when circular, rarely exceeds three inches in diameter. It is only slightly painful, is quite superficial, soft and moveable, does not increase after the 8th hour, and is rapidly absorbed during the course of the second day. It never affects the action of the muscles, nor does it cause lameness. Sometimes a fluctuating dependent swelling of considerable size follows a careless or unskillful injection, but this, as a rule, is absorbed rapidly during the first 24 hours.

With ordinary precautions septic infection seldom takes place, and abscess formation is rare except in typical reactions, when it is not uncommon. Occasionally considerable swelling, sometimes accompanied by a thermal rise, will occur in horses suffering from influenza and similar affections. Such so-called reactions are not typical, and should not be ascribed to the action of mallein, but to the already existing febrile condition of the animal.

Cases sometimes occur in which, at the end of 24 hours after injection, neither thermal nor local conditions are sufficiently definite to enable the veterinarian to reach a decision. In these circumstances the animal should be kept under close observation for a further period of 24 hours, when, if it is diseased, the increased swelling and marked lameness which almost invariably follow will remove any possible doubt. Suspected cases which have failed to give a decided reaction will not unfrequently develop clinical symptoms if put to hard work immediately after being tested.

Reaction, both thermal and local, but especially the latter, is not as well marked in mules as in horses, but as in the former acute symptoms are more likely to develop early in the course of the disease, the risk from latent cases is less serious.

It may be laid down as a general rule that while an apparent improvement in health and condition may, and frequently does, follow the application of the test in mild or incipient cases, the effects of mallein on animals in advanced stages of the disease are invariably bad, and that the testing of such cases hastens a fatal termination.

Local reactions are more pronounced in hot weather than when the atmospheric conditions are moderate. In connection with this statement I would call attention to the fact that under temperate weather conditions, as, for instance, on the Pacific slope, the prevailing type of glanders, while decidedly infectious, is much milder than that seen in most other parts of the country.

Sudden changes of weather seem to favour the development of acute cases, while under steady heat or cold the disease frequently remains dormant. For this reason serious outbreaks are with us more common in spring and fall than in the steady weather of winter and summer.

I am aware that my conclusions as to what constitutes a typical reaction to mallein differ somewhat from those arrived at by the Eighth International Veterinary Congress held at Budapest last year. I have, however, been guided entirely by the results of our own work, and as these are most convincing, I am inclined to attribute the variation, which is, after all, more apparent than real, to a possible difference in conditions between Europe and America.

I need hardly point out that, in order to secure satisfactory results, the conditions surrounding the animals should be normal while the test is being conducted. The administration of water, and even of food, the regulation of body heat and of ventilation, must all be carefully watched, in view of their relation to thermal change. For the same reason no exercise whatever should be permitted while the test is being carried on.

In conclusion I would say that the operations which we have conducted, and their results, have shown in the most convincing manner the great value of Mallein as a diagnostic agent when intelligently used by careful and experienced veterinarians. The expressed views of our inspectors on this point indicate that it can be absolutely relied upon in about 98 per cent. of the animals submitted to its action.

I take this opportunity of expressing my sense of obligation to those Inspectors whose comprehensive reports have rendered it possible for me to thus summarize the results of our work.

I would add that on the occasion of the last annual meeting of the American Veterinary Medical Association, which was held in New Haven, Connecticut, in August of this year, I laid before that body the facts set forth in this report, with the result that the following resolution was unanimously passed by the Association:

'Whereas, in the presentation of Canadian state control work with Glanders by Veterinary Director-General Dr. J. G. Rutherford, it is apparent that the Canadian Government has undertaken control work with infectious disease of animals upon a scale that is highly creditable and in a way commensurate with the importance of the work, and

'Whereas, actual results shown in this report plainly justify the heavy expenditures incurred; therefore be it

'Resolved, That we commend those in higher Canadian Government authority for thus generously supporting this work, and commend the general organization and plan of the Canadian work to the consideration of the Federal authorities and to our various state authorities in so far as it may be applicable to their conditions and not already in force.'

This hearty endorsation of our policy by the leading veterinarians of this continent is very gratifying, especially when considered along with the movement now on foot in Great Britain to bring about the adoption of measures similar to those in force here.

I have the honour to be, sir,
Your obedient servant,

J. G. RUTHERFORD,
Veterinary Director-General and Live Stock Commissioner.

The Honourable, The Minister of Agriculture.

THE COMMERCIAL LIVE STOCK INDUSTRY IN WESTERN CANADA.

March 31, 1908.

SIR,—Early in the month of June, 1907, acting under your instructions I attended the annual meeting of the Central Alberta Stock Growers' Association. I listened to the various discussions that took place and learned much regarding the conditions under which ranching is carried on in Central Alberta. I also had an opportunity of meeting many of the ranchers, as well as a number of prominent cattlemen, some of whom represented large dealing concerns in Canada and the United States.

BRITISH COLUMBIA MEAT MARKET.

Returning from Erskine to Calgary, I proceeded direct to Vancouver to investigate the source of the imported meat supply of British Columbia. I interviewed your representative, Dr. S. F. Tolmie, and also met a number of inspectors connected with the Health of Animals Branch, all of whom gave me what assistance they could in obtaining information.

With regard to the importation of Australian meat, I found that there had been imported between the 1st of January and the 14th of June, 1907, 774,104 lbs. of mutton and 4,022 lbs. of veal. The mutton carcasses would average from 60 to 75 lbs., and the cost laid down in Vancouver was about 7½ cents to 8 cents per lb It was of fairly good quality and apparently gave good satisfaction to consumers. It was not all used in British Columbia as a considerable quantity of it found its way into Alberta. The importations of Australian mutton are made during the winter months. One firm does all the importing as it controls all space on the Canadian Pacific Railway boats.

From the United States the importation returns for 1908 up to the 16th of June show:—

To Victoria, 7,026 sheep; to New Westminster and Vancouver, 4,390 sheep and 74 cattle; via Gateway, Kingsgate, Midway, Grand Forks and North Portal, 456 cattle and 134 calves.

The above figures may include a number of animals imported by settlers. From Alberta, for the first six months of the current year, the reports, as far as I have been able to obtain them, show the shipments of cattle to have been 6,989 head. In addition to this, there were large shipments of dressed beef, pork, &c., from Alberta to British Columbia, but of this I was unable to obtain statistics.

I also obtained some information as to the importation or horses, &c., for the first six months of the current year, as follows:—

From United States to Victoria, 116 horses; from the United States to New Westminster and Vancouver, 340 horses, 4 mules, 24 goats, 1 swine, pure bred.

Via Gateway, Kingsgate, 288 horses; Midway, Grand Forks, 19 mules; North Portal, 2 hogs, pure bred; from Alberta, 288 horses.

LOCAL WESTERN MARKETS.

During the month of July conditions of the local markets were investigated. I spent some time in Winnipeg stock yards and visited Brandon, Regina, Moosejaw, and some of the other small towns in order to learn if possible from whence the local meat supplies were derived. All the above towns obtained practically their total supply of fresh meat from the farmers in the district immediately surrounding them-Moosejaw, however, was importing considerable dressed meat in refrigerator cars from the Winnipeg abattoirs.

WINNIPEG HOG MARKET.

In Winnipeg I found that the average price for live hogs from January 1 to July 25, weighed off cars was 7½ cents. Eighty-five per cent of the hogs received were from Manitoba points, the remainder from Saskatchewan and Alberta with a very few from Ontario. The packers reported that farmers had been marketing great numbers of brood sows, which movement was doubtless occasioned by the high price offered and the general scarcity of money. During 1906 the J. Y. Griffin Co. imported 3,000,000 lbs. of pork products from the United States, upon which they paid $60,000 in duty. They imported about the same quantity from Ontario, and doubtless the Gordon Ironsides and Fares Co. imported about the same quantity This shows the splendid market which is still open to the farmers in the western provinces in supplying this demand.

HORSE MARKET.

The market for horses for both farm work and railway construction was exceedingly active up to July, when it became quiet and dealers do not look for an early arrival. The stock yards returns show receipts of horses from the south and east for the first six months of the year, of 19,843 head. In addition there were probably 600 to 700 horses picked up from Manitoba farms at about $200 a piece to the farmers. Most of these horses were disposed of in Saskatchewan and Alberta, a few going to British Columbia—about 75 per cent for settlers and railway work and the remainder for city draying purposes. Prices run about as follows:—

For teams averaging 2,800 lbs., $400 to $550 per team; for teams averaging 3,200 lbs., $650 to $900 per team; express horses from 1,200 to 1,300 lbs., $225 to $300 per head.

There has been a good demand for carriage horses and one shipper from Iowa brought in two carloads which sold at an average of about $600. Ontario shipments are usually fed and watered at North Bay and Schreiber Toronto and Montreal freight for ordinary stock cars are 58½ cents per 100 lbs.; palace cars, 87½ cents per 100 lbs. Dealers usually figure for freight and expenses, $10 to $12 a head.

WINNIPEG CATTLE MARKET.

The average price for cattle from January to July on the Winnipeg market was 4¼ to 5¾ cents. On July 25 I saw a train load of western export steers weighed at Winnipeg stock yards. These cattle were said to be from P. Burns & Co., Calgary, and sold to Gordon, Ironsides & Fares, at 5 cents, Winnipeg weights. They were fed hay during the past winter and arrived in Winnipeg in fair condition, the 349 head, weighing 470,770, an average of 1,350 lbs. per head. They were billed through from Calgary to Montreal with stop-over privileges at Winnipeg to cull out. The through rate was 85 cents per 100 lbs. from Calgary to Montreal and 45 cents per 100 lbs. from Calgary to Winnipeg.

MOVEMENT OF RANGE CATTLE.

The range cattle began to move to market about a month later than usual owing to the severe winter and the backwardness of the spring. The first shipments were made in the latter part of August. On the 19th of that month I arrived at Moosejaw and saw a train load of cattle unloaded there. They had been shipped from Carstairs on Friday night the 17th, arriving at Moosejaw on Sunday morning, there they were fed and watered, and reloaded at 4 p.m., leaving that evening at 7.30 and arriving in Winnipeg at 10 p.m. on Monday night, taking 72 hours, with the Moosejaw stop-over included, to make the trip. These cattle were a mixed lot of butchers and exporters (the latter would average about 1,350 lbs.), consigned to J. Y. Griffin & Co. The price weighed off cars at Winnipeg was about 4¾ cents. These cattle arrived at Winnipeg in fair condition, much better than another lot of cattle I saw unloaded there on the same day that came through without feeding at Moosejaw. I also saw two train loads of cattle that came through from Calgary to Winnipeg without feeding at Moosejaw. I learned that they made the run in 48 hours. The shipper being anxious to get them east to catch a certain boat, they were run through without feeding at Moosejaw.

The custom of dealers is to buy at a given price per pound weighed off cars in Winnipeg, consequently it is to their advantage to bring cattle through without feeding at Moosejaw. It is also to the advantage of the C.P.R., as it saves them the expense and delay of holding over the trains. For cattle for immediate slaughter it appears no detriment, as of course they will not shrink in dressed weight. It does, however, appear to be a hardship on the rancher who sells under such conditions, as the cattle shrink from 100 to 150 lbs. from the time they are loaded until they arrive in Winnipeg, and it is a hardship on the cattle as they are frequently held on board the cars from 40 to 70 hours making the run. This, in addition to the fact that they are frequently held on bare ground in the neighbourhood of the loading platforms for many hours waiting for cars and to be unloaded, makes a long period without feed and water. Shippers all agree that the principal shrinkage in range cattle takes place between the point of shipment and Winnipeg. After resting and feeding at Winnipeg the cattle generally do not shrink much more.

It must be remembered that these range cattle are very wild and every time they are handled in and out of the cars and yards they bruise themselves and knock themselves about badly, so that considering all things it is difficult to lay down any hard and fast rule that might be applied. For instance if they were well watered and fed immediately before loading and got a good run through from loading point to Winnipeg, say 35 or 40 hours, it might be better for all concerned, including the cattle, not to be unloaded until they arrive in Winnipeg yards, where they will generally settle down and feed better than they will if unloaded before they are thoroughly hungry.

MOOSEJAW YARDS.

I examined the Moosejaw Yards and found them well constructed and supplied with good water and fairly good hay. The yards are leased from the railway company to the Moosejaw Brewing Co., at rates for the different seasons as follows:—

For months of July, August and September:—

Hay for lots of ten cars or more, $12. per ton or 20 cents per head.

In smaller lots 22 cents per head of $14. per ton for 1 feed.

Each individual yard $4.50, well hayed and watered.

For October, November and December:—

In lots of 10 cars of cattle or more, hay $13.50 per ton or 22 cents per head.

In smaller lots 25 cents per head or $15. per ton for 1 feed.

Each individual yard $5.00 well hayed and watered.

For January, February, March, April, May and June:—

Loose hay $16. per ton, baled $20. per ton.

The company agrees to keep one man at the Stock Yards continually and when reasonable notice is given they have sufficient help on hand to assist in taking care of all stock passing through.

CANADIAN CATTLE SHIPMENT TO THE UNITED STATES.

I was in Moosejaw again on September 11th and inspected the loading of a train of 21 cars that were going through from the Red Deer country billed to Chicago. They were a mixed lot of steers 3 or 4 years old and cows. These cattle paid the duty of 27½ per cent on an apprisement per head as follows:—cows $20; 3 year old steers $30; and 4 year old steers $40.

17	steers	averaging	1396 lbs.	brought	$610	grossing	$85.18 per head
21	"		1374	"	5.50	"	75.57 "
122	"		1245	"	5.30	"	66.00 "
66	"		1159	"	4.60	"	53.34 "

Cows medium weights grossed $40 to $60 per head.

I next proceeded to Strathmore and saw a shipment of cattle loaded for Chicago. They were a select lot of Hereford grades, and very uniform. The lot included 360, 3 and 4 year olds, and were American cattle that had been on Canadian grass for less than 2 years, and consequently were entitled to re-enter the States duty free—I afterwards learned that they were sold as follows:—

360 head, averaging 1,233 lbs., brought $5.75.

7 head (the tail enders) brought $4.40.

Later in the season (early in November) I had an opportunity of seeing a shipment of Alberta cattle unloaded in the Chicago yards. This particular lot were shipped by C. J. Reed and C. Gissenger from Red Deer, which point they left on Saturday, October 26. They were fed and watered at Moosejaw for 24 hours; at Velva, N.D., 16 hours at St. Paul, 24 hours; arriving in Chicago, November 4th, making the trip in 9½ days. The shippers were well satisfied with the run and the accommodation en route, but complained that they were obliged to hold the cattle for a week after ordering the cars before they could ship, and further that they had to use a large number of box cars. The freight from Red Deer to Chicago is 83 cents per 100 lbs. This consignment was of a very mixed lot of two, three and four year old steers, and cows, upon all of which duty had to be paid.

13	steers	averaging	1327 lbs.	brought	$5.55,	grossing	$69.66 per head
20	"		1405	"	5.10	"	71.65 "

Steers of other grades sold down from $4.35 to $4 per head, while cows sold at from $3.90 to $3 per head.

At this time the market was very bad. The shippers claim that they lost heavily on this shipment.

I also saw another shipment made by the Cresswell Cattle Co. from Swift Current, from which point the freight was 71 cents per 100 lbs. This bunch of cattle was not in good shape. The tops only brought $4.65; the next grade $4.05 with cows selling from $3.60 to $2.80. They entered the United States free of duty.

WHITE RIVER YARDS.

Acting under instructions I left Winnipeg on October 10 for White River. While there a train load of cattle were unloaded and fed. These cattle had left Lethbridge on October 9, at 4.30 p.m. They were fed and watered at Moosejaw and arrived in Winnipeg on the 12th at 1.30 p.m., arriving at White River at 3 p.m. on the 14th, leaving again at 9 p.m. the same day for Montreal where they arrived at

6 p.m. They were again shipped from Montreal at 11 a.m. on the 17th for Boston, making the trip from Lethbridge to Montreal in about 7 days. The short stop at White river did not allow the cattle much time to feed but a liberal supply of hay was put in the cars. This particular consignment was being rushed through to catch a boat. The man in charge reported some delay between Winnipeg and White river, but made no complaint regarding other portions of the trip. The yards at White river were in first class order and very conveniently arranged for handling large numbers of cattle. They were charging $24 a ton for hay at that time.

EARLY WINTER CONDITIONS OF ALBERTA CATTLE.

Early in the month of January, 1908, I made a careful investigation of the live stock conditions throughout Alberta, inquiring into the live stock and range conditions. Up to the time of my visit, the winter had been very mild and favourable, I found that a very large number, probably twelve or fifteen thousand head of cattle were being hay fed during the winter, and they were reported doing remarkably well under the favourable weather conditions.

In order to see some cattle that were being fed, I went out on the Stettler Branch to Alix, and from there drove out 6 miles to Mr. Wm. Graft's where 190 head were being fed. As the method followed by Mr. Graft is very similar to that in vogue throughout Central Alberta, I shall describe it. A small lake surrounded with steep, partly wooded banks provides abundant water and some shelter. The feed which consists chiefly of hay is drawn direct from the stack and scattered on the ground, along the banks of this little lake. In addition to hay an allowance is given of one sheaf and a half of green cut oats per head per day. The cattle were three and four year old range steers selected from the surrounding district. They were, when I saw them, in fine thrifty condition, and should make early exporters. The intention of the feeders was to ship them early off grass, if they continued to thrive. At the time of my visit buyers were offering to contract for spring delivery at the rate of 4½ cents for hay fed cattle, and 4¾ cents for grain fed cattle, but there were not many 'takers' at these prices.

Owing to the favourable winter and the good quality and abundance of feed, there is no doubt that Alberta cattle will be shipped early and in better condition than during the year previous. This, however, may to a corresponding extent reduce the fall shipments.

Shipments have continued from Alberta throughout the winter up to the present time. During the month of January, from 1,400 to 1,500 head were shipped to the Winnipeg market, about 1,100 of which were forwarded as exports. The remainder can be classed as 'butchers' being mixed lots of cows and heifers. Butchers' cattle are bringing on the Winnipeg market from 3 to 3¾ cents per lb.

ALBERTA CATTLE SHIPMENTS FOR 1907.

The total shipments east off the Alberta ranges during 1907 amounted to 80,043 head, the following tables show the disposal of same:—

Shipped east via C.P.R.:—	
Exports	40,000
Stockers	4,000
Butchers (slaughtered in Winnipeg)	27,321
	71,321
To Chicago via C.P.R.:	
Duty paid	2,158
Duty free	2,591

To Chicago via Great Northern:—

Duty paid	2,733
Duty free	1,240
Total	80,043

HOGS.

A considerable number of hogs are now being shipped from farms in Central Alberta, and from interviews with a good many settlers, I gathered that this was a profitable industry, and with increased facilities, for obtaining cheap feed it is likely to grow into a very important branch of the live stock industry. While I was at Lacombe two car loads were shipped to British Columbia the price paid to farmers being 4 to 4½ cents.

THE SHEEP INDUSTRY.

The very heavy blow sustained by the sheep ranches during the severe winter of 1906-07 has, to a large extent, paralyzed this industry. During the two previous winters, a considerable number of sheep were fed at Moosejaw and Port Arthur on wheat screenings. Little feeding however is being done this winter. On my way west I saw a small bunch of about 300 being fed near Moose Jaw. They were Merino grades of rather indifferent quality but when seen on my return 2 weeks later had improved wonderfully. The method of feeding is very inexpensive, large, cheaply constructed sheds are built in a sheltered location, under a steep bank near a creek, where water is available. In these sheds self feeding pens are placed in which the screenings are dumped and to which the sheep had access at all times. In addition to the screenings hay is fed. The sheep made excellent gains at comparatively little expense and command the top market price.

JAMES F. ROBB.

The Live Stock Commissioner,
Ottawa.

INDEX.

Report of the Veterinary Director-General and Live Stock Commissioner:—

Health of Animals Branch— PAGE.

Anthrax.. 27
Anthrax Statistics.. 28
Biological Laboratory.. 30
Blackleg Vaccine.. 28
Black Quarter.. 28
Car Inspections.. 38
Diseased Import Statistics.. 35
Export Inspection.. 30
Export Inspection Statistics.. 30
Export Rejection Statistics.. 31
General.. 4
Glanders.. 14
Glanders Statistics.. 15
Glanders, Special Report on.. 120
Hog Cholera.. 10
Hog Cholera Statistics.. 10
Import Inspections.. 32
Import Inspections Statistics.. 32
Import Rejections Statistics.. 35
Import Tests.. 34
Import Pure-bred Statistics.. 35
Lockjaw, Special Report on.. 118
Loco Poisoning.. 29
Loco Poisoning, Special Report on.. 107
Maladie du Coït.. 25
Maladie du Coït Statistics.. 26
Mange in Cattle.. 23
Mange in Cattle Statistics.. 24
Mange in Horses.. 26
Mange in Horses Statistics.. 26
Mange Dipping.. 24
Mange Dipping Statistics.. 24
Meat Inspection.. 38
Meat Inspection Statistics.. 42
Pictou Cattle Disease.. 21
Pure-bred Imports.. 35
Quarantine.. 37
Rabies.. 28
Rabies, Regulations relating to.. 29
Redwater, Special Report on.. 115
Sheep Scab.. 26
Sheep Scab Statistics.. 26

Report of the Veterinary Director-General and Live Stock Commissioner—*Con.*

Health of Animals Branch—*Continued.* PAGE.

Statistics *re* Anthrax 27
Blackleg Vaccine 28
Diseased Imports 35
Export Inspections 30
Export Rejections 31
Glanders 15
Hog Cholera 10
Import Inspections 32
Import Rejections 35
Import Mallein Tests 34
Imports Pure-bred 25
Maladie du Coït 25
Mange in Cattle 24
Mange in Horses 26
Mange Dipping 24
Meat Inspection 42
Sheep Scab 26
Tuberculosis 14
Stock Yards 38
Tuberculosis 11
Tuberculosis Circular 12
Tuberculosis Statistics 14

Reports of—
G. Hilton, V.S 52
C. H. Higgins, D.V.S 59, 77
W. H. Pethick, D.V.S 69, 99
F. Torrance, D.V.S 71
S. H. Ward, V.S 73
A. Watson, V.S 106

Special Reports on—
Glanders by the Veterinary Director-General 120
Lockjaw by S. Hadwen, D.V.S 118
Loco Poisoning by G. Hilton, V.S 107
Red Water by T. Bowhill, M.R.C.V.S 115

Live Stock Branch—
Convention of Live Stockmen 50
Distribution of Breeding Stock 48
Farmers' Institutes 47
General 44
Judges for Fairs 46
National Live Stock Records 49
Record of Performance 45
Sales of Stock 49
Western Canada, Live Stock Industry in 44

Special Report on the Commercial Live Stock Industry in Western Canada, by J. F. Robb 136

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